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FLORA RUSTICA:

EXHIBITING

ACCURATE FIGURES OF SUCH PLANTS AS ARE
EITHER USEFUL OR INJURIOUS IN

HUSBANDRY.

DRAWN AND ENGRAVED BY

FREDERICK P. NODDER,

BOTANIC PAINTER TO HER MAJESTY,

AND COLOURED UNDER HIS INSPECTION.

WITH

SCIENTIFIC CHARACTERS, POPULAR DESCRIPTIONS,
AND USEFUL OBSERVATIONS,

BY

THOMAS MARTYN, B.D. and F.R.S.

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CAMBRIDGE.

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1792.



TO THE
K I N G.

SIR,

YOUR Majesty's unexampled encouragement both of the polite and useful arts, must call forth the gratitude of every good subject. That we, in our humble stations, are permitted to dedicate to your Majesty this our little attempt to make the one subservient to the other, is a mark of condescension for which we can never be sufficiently thankful.

Agriculture, the most useful of all the arts, has rarely been so fortunate as to be cherished by Royal patronage and example. But it was reserved for your Majesty to discover and to pursue the road to genuine glory; by encouraging whatever most conduces to render your dominions happy and prosperous.

That your Majesty may long reign the beloved Father of a united people, fully sensible of the many blessings which they enjoy in a superior degree to any

other nation, and untingured with those levelling principles which have been so destructive to the peace of a neighbouring kingdom, is the earnest wish of those who are,

With unfeigned loyalty,

And zealous attachment,

Your MAJESTY'S

Most devoted servants,

THOMAS MARTYN.

FRED. P. NODDER.

THE PREFACE.

THE slow progress which many useful arts have made even in civilised countries, may, perhaps, be attributed, at least in great measure, to the want of a coalition between Scientific and Practical men. The latter have too frequently despised the former as mere speculatists; whilst men of science have looked superciliously on the simple practitioner. This remark may be applied, too justly, we fear, to the important art of Husbandry. Very few scientific men have heretofore condescended to employ their talents on an employment merely useful, conducted by the mean unlettered peasant: and very few indeed of those to whose lot it has fallen to till the soil, have been acquainted with theory themselves, or have been able even to profit by the theory of others. But happily for mankind, the scene is now changed, and Britain takes the lead in placing the first of arts on a firm basis, in establishing it on rational and philosophic principles. Agriculture cannot fail of becoming a profession as honourable among us as it was among the ancient Romans, since the chief of our nobility and gentry cultivate their own lands on an extensive scale, and it receives the sanction and example of Majesty itself. The Society of Arts also has greatly encouraged improvements in husbandry by their liberal offers of premiums; and an extensive

correspondence has been opened between different provinces of the empire, by means of Mr. Arthur Young's Annals of Agriculture.

Among these great exertions let us hope that our humble attempt to promote and assist the progress of Husbandry will not be overlooked. It is our design to present the Public with such figures and descriptions of those plants with which the husbandman is principally concerned, as may leave no doubt upon his mind what object is intended, when one of them is recommended to him for its utility, or another is pointed out as proper for destruction. Most of the vegetables in common cultivation, must of course be well known; but many even of these are confounded in a multiplicity of local names and corrupted appellations*: whilst the grasses, it must be confessed, are hardly distinguished by any. These being the least known, and yet of the greatest general utility, we purpose gradually to figure and describe the greater part of them, if not the whole; so that whilst the Agriculturist becomes acquainted with their form and qualities, the Botanist may possess a set of figures which he will search for in vain, either united, or scattered in various works.

The encouragement we have received from several respectable societies, as well as from individuals, flatters us that we have met with the approbation of the Public, and will incite us so to proceed, as that we may continue to deserve their patronage.

* Rie-grass and Ray-grass; Saint-foil and Cinquefoil, &c.

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EXPLANATION OF TERMS.

A.

ACUMINATE. Very sharp pointed. Ending in an awl-shaped point. t. 4, 5, 6.

Aggregate, flower. When several small flowers are so combined by the intervention of some part of the fructification, that taking away one of them destroys the uniformity of the whole. This common bond is either the receptacle or the calyx. t. 1, 2, 3.

Approximating. Approaching, or very near to. t. 15.

Awl-shaped (Subulatus). Linear below, but gradually tapering towards the end, like a cobbler's awl.

Awn (Arista). A process from the glume or chaff, in corn and grasses, commonly called the *Beard* in corn. t. 7 & 33.

Awnless. Having no awn.

B.

Banner or Standard (Vexillum). The upper large petal of a papilionaceous or pea-flower. t. 8.

Biennial. Enduring two years, and then perishing.

Bracte, Bractea, or Floral leaf. A leaf different from the other leaves in shape and colour, generally situated on the peduncle, and often so near the corolla as easily to be mistaken for the calyx.

C.

Calyx. The flower-cup, or outer green covering of the flower. t. 8, f. 1.

Ciliate. Guarded on the edge by parallel hairs, resembling the eye-lashes. t. 5.

Compound leaf. Connecting several leaflets on one petiole. t. 1, 2, 3. t. 15. t. 16. t. 28, 29, 30.

Connate. United, cleaving together.

Corolla. The inner covering of the flower, which being commonly larger and more spacious than the other parts, is in common language frequently called the flower.

Creeping stem. Running along the ground, and putting out roots. t. 29.

Culm. The stem of corn and grasses. When dry, called straw, in corn.

Cusp. The point of a lance applied to the calyx. t. 5.

D.

Dichotomous, or forked. Dividing constantly by pairs. t. 24.

Digitate leaf. Compound, having a simple petiole connecting several leaflets, spreading like the fingers when open, and usually five in number. t. 16.

Divaricate, or straddling. Parting from the stalk or branch at an obtuse angle.

E.

Elliptic leaf. A long oval. t. 9.

Emarginate. End-nicked, or notched at the end. t. 19.

F.

Filament. The thread-like part of a stamen, supporting the anther, and connecting it with some other part of the flower.

Flexuose stem. Changing its direction in a curve at every joint. t. 4.

Floscule or Floret. One of the small component flowers of an aggregate flower.

Footstalk. See Petiole.

G.

Germ, Ovary, or Seed-bud. The rudiment of the fruit yet in embryo.

Glaucous. Of a sea-green colour.

Globular or spherical. Round like a globe, sphere, or ball.

Glomerate. Growing close in form of a ball. t. 14.

Glume. The calyx or corolla of corn and grasses, called the *husk* or *chaff*, when dry.

H.

Head. A manner of flowering, in which the flowers are in a close roundish form. t. 1, 2, 3.

Hirsute. Shaggy, rough with hairs.

I.

Imbricate. Lying over each other, like tiles on a roof. t. 6.

Involucre. A calyx remote from the flower. t. 3. &c.

K.

Keel (Carina). The lower petal of a papilionaceous corolla, inclosing the stamens and pistil; usually shaped like a boat. t. 8.

L.

Lanceolate leaf. Shaped like the head of a lance. Oblong, and gradually tapering to each extremity. t. 1. t. 8. f. 6.

Leaflet. A diminutive of leaf, and put for the component leaf in compound leaves. t. 15.

Legume or Pod. A membranaceous seed-vessel of one cell and two valves, in which the seeds are fixed alternately along one suture only, as in Pea, &c. In the *Siliqua*, which is also called a pod in English, the seeds are ranged along a partition, dividing it into two cells, and they are fastened to both futures, as in Stock, Wall-flower, Turnip, &c.

Leguminous Plants. Having a legume or pod for a seed-vessel. t. 8, 15, &c.

Linear. Of the same breadth from end to end. t. 24.

M.

Melliferous. Producing honey, as the nectary.

Monopetalous. Consisting of one petal.

Multifid leaf. Divided into several parts, which have the edges straight, and therefore linear sinuses between them. t. 28.

N.

Nectary or Nectarium. A part of the flower secreting honey. t. 21, 28, 29, 30.

Nerve. A simple unbranched vessel in a leaf, stipule, &c.

O.

Ovate or egg-shaped leaf. Longer than broad, the base the segment of a circle, and narrower at the extremity. t. 8. f. 7.—In the *oval* leaf the curvature is the same at both ends, but the proportion of breadth to length nearly as in the section of an egg.

P.

Panicle. A form or manner of flowering, wherein the flowers or fruits are dispersed on peduncles variously subdivided. t. 7.

Papilionaceous corolla. Butterfly-shaped, consisting of four irregular petals; one called the banner or standard, two wings, and the keel, as in Pea, &c. t. 8, 15.

Peduncle. The flower or fruit-stalk, supporting the fructification only. t. 8. f. 3.

Perennial. Continuing several years.

Petal. The leaf of the corolla. In monopetalous flowers it is the whole corolla; in polypetalous flowers each part is a petal.

Petiole. The leaf-stalk or foot-stalk, connecting the leaf with the branch. t. 1, 2, 3. t. 8. f. 8. t. 19, 21, &c.

Pinnate leaf. A compound leaf, having a simple petiole, connecting two rows of leaflets. t. 15.

Pistil or Pointal. An organ in flowers for the reception of the farina or pollen. It consists of the Germ, Style, and Stigma.

Pollen. The farina, fine meal, or impregnating dust, contained in the anther of flowers.

Procumbent stem or stalk. Lying along the ground, without putting forth roots.

Pubescent. Covered with hairs.

R.

Receptacle. The base connecting the other parts of the fructification.

S.

Scabrous, Rugged. Rough with tubercles or prominent stiffish points.

Serrate. Toothed like a saw.

Serrulate. Having very small teeth.

Sessile. Sitting close: in leaves without any petiole; t. 4, 5, 6, &c. in flowers and fruits, without any peduncle. t. 2, 3, 12.

Sinuate leaves. Having wide openings in the sides. As the Oak. t. 10.

Spatha or Spathe. A kind of calyx, opening or bursting longitudinally, in form of a sheath. As in Arum, Narcissus, &c. t. 1, 3, 13.

Spike. A form or manner of flowering, wherein sessile flowers are placed alternately on a common simple peduncle. As in an ear of wheat, rye, or barley; in many of the grasses, in lavender, &c. t. 4, 5, 6.

Spikelet or Spicule. A partial spike, or subdivision of a spike.

Spinule, dimin. of Spina. A little thorn.

Stamen. An organ in flowers for preparing the farina or pollen. It consists of the filament and anther.

Stigma. The top of the pistil; pubescent and moist, in order to detain and burst the pollen.

Stipula or Stipule. A scale at the base of the nascent petiole or peduncle. t. 8. f. 9. t. 1, 2, 3.

Style. The middle part of the pistil, connecting the stigma with the germ. t. 8. f. 2.

Subcylindric. Almost cylindric.

Subflexuose. Somewhat or slightly flexuose. t. 2.

Subglobular. Almost globular, spherical or round.

Subovate. Nearly or almost ovate.

Subquinquefid. Slightly cloven into five parts.

T.

Tendril or Clasper (Cirrus). A filiform spiral band, by

which a weak plant supports itself on other bodies, as the Vine, Pea, &c. t. 8. f. 4.

Ternate leaf. Having three leaflets on one petiole: as in the Trefoils. t. 1, 2, 3.

Throat (Faux). The opening of the tube in the corolla, or between the segments of the corolla, where the tube ends.

Trifid. Three-cleft, or cloven into three parts.

Truncate. Cut off at the end in a transverse line; as the leaf of the Tulip-tree.

V.

Valve. The outer covering of a seed-vessel, or the several pieces which compose it—also the leaflets of the calyx and corolla in grasses; and the scales which close the tube in some flowers, as in Borage.

Verticillate plants. Having the flowers growing in a whorl, (Verticillus). t. 25, 26.

Villous. Covered with soft hairs, like the pile of velvet.

Umbel. A kind of receptacle, extending slender proportional peduncles from a common centre, like the sticks of an umbrella. As in Parsley, &c. t. 24.

W.

Wings (Ala). The two side petals in a papilionaceous corolla or pea-flower. t. 8.

Whorl (Verticillus). A manner of flowering, in which several flowers surround the stem or branch in a ring. t. 25, 26.

INDEX OF LATIN NAMES.

ALOPECURUS agrestis	22	Phalaris canariensis	17
Alopecurus pratensis	6	Phleum pratense	5
Anthoxanthum odoratum	23	Quercus robur pedunculata	10
Arundo arenaria	32	seffilis	11, 12
Avena elatior	7	Ranunculus acris	30
Coronilla varia	15	bulbosus	28
Cynofurus cœruleus	20	Ficaria	21
Daëtylis glomerata	14	repens	29
Elymus arenarius	31	Trifolium alpestre	1
Lamium album	26	flexuosum	13
purpureum	25	Lupinaster	16
Lathyrus latifolius	8	medium	2
Lolium temulentum	33	ochroleucum	35
perenne	4	pratense	3
Medicago lupulina	19	repens	34
Nardus stricta	27	rubens	6
Phalaris aquatica	18	Valeriana Locusta	24

INDEX OF ENGLISH NAMES.

ARCHANGEL, red	25	Herd-grafs	5
white	26	Honeyfuckle Trefoil, white	
Blackfeed	19		34
Butter-flowers, or Butter-		King-cups	28, 29, 30
cups	28, 29, 30	Lamb's-Lettuce	24
Canary-grafs, cultivated	17	Lupin, bastard	16
water	18	Lyme-grafs, fea	31
Cat's-tail-grafs, meadow	5	Mat-grafs, or Mat-weed	27
Celandine, leffer	21	Medick, black or hop	19
Clover, broad	3	Moufe-tail-grafs	22
Dutch or white	34	Nonefuch	19
perennial	2	Oak	10, 11, 12
Cock's-foot-grafs, rough	14	Oat-grafs, tall	7
Corn-falad	24	Pilewort	21
Coronilla, purple	15	Ray-grafs	4
Cow-grafs	36	Reed-grafs, fea	32
Crowfoot	28, 29, 30	Timothy-grafs	5
Darnel, annual	33	Trefoil	19
perennial	4	alpine	1
Dead-Nettle, red	25	bastard	16
white	26	cow-grafs	36
Dog's-tail-grafs, blue	20	creeping white	34
Everlafting-Pea, broad-leaved		honeyfuckle	3
	8	long-fpiked	9
Fox-tail-grafs, field	22	pallid	35
meadow	6	perennial	2, 13
Gold-cups or Gold-knops	28,	Vernal-grafs	23
	29, 30		

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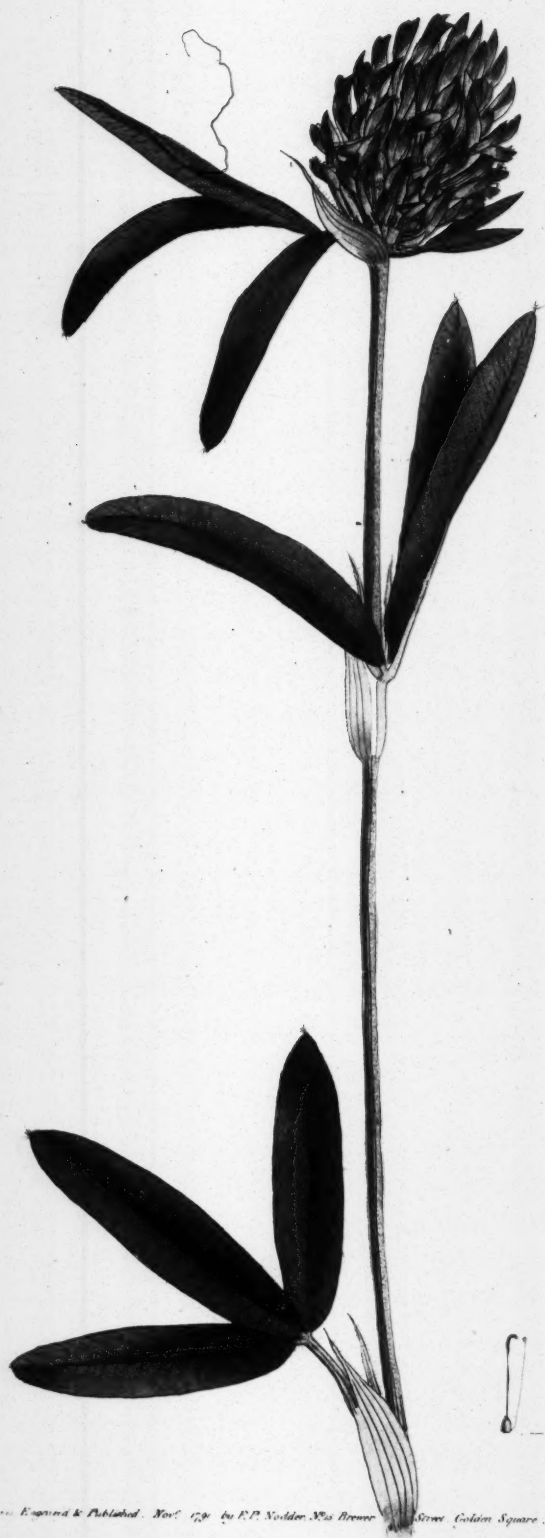
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TRIFOLIUM ALPESTRE.

Alpine Trefoil.

DIADELPHIA Decandria.

GENERIC CHARACTER.

Flowers usually in a head. Legume or pod scarcely longer than the calyx, not opening naturally, but deciduous, or at length falling off entire.

SPECIFIC CHARACTER.

Spikes of flowers close, corollas almost equal, stipules bristle-shaped diverging, leaflets lanceolate, stalks stiff, upright, and undivided.

Lin. spec. 1082. *syft.* 688.—*Jacquin. fl. austr.* 5. t. 433.

Trifolium majus 2. *Clus. hist.* 6. 245.

Tr. montanum purpureum majus C. B. *Raii hist.* 944.

Tr. fol. long. fl. purp. *Rivin. tetr. t.* 12.

THIS is readily distinguished by its straight, round, and simple stalk; short, upright petioles or footstalks; narrow leaflets, strongly veined; first spike of flowers sessile; calyx always downy, and of the same colour all over. To these distinctions we may add, that the stipules are marked with

one nerve only, villous, approaching to the stalk, but diverging from each other: the leaflets so finely toothed round the edge as to be hardly visible without a glass; a few short hairs are scattered all round, but at the end there is usually a small bundle or pencil of hairs: sometimes there is only one head of flowers, but more frequently there are two, in which case the second head is not sessile like the first, but stands on a short peduncle or flower-stalk; this also comes out later; each has its floral leaf protecting it when young: the flowers very closely crowded together, and each of them upright; the calyx very villous; of its five teeth, the upper pair is shortest; the lower somewhat longer, and about the same length with the tube; the fifth or odd tooth is twice as long as the others or more; the corolla dark purple, and void of scent; the wings of the same length with the banner, or scarcely shorter, but a very little longer than the keel.

This species is a native of Hungary, Austria, Bohemia, Moravia, Stiria, and Piedmont, growing in dry mountainous woody places. Mr. Dickson has found it abundantly in Scotland.

It is never cultivated, nor can it be recommended for that purpose, since it affords few leaves, and does not branch, This is certainly the true Alpine Trefoil.



Prunella angustifolia (L.) DC. var. *angustifolia* (L.) DC. var. *angustifolia* (L.) DC.

TRIFOLIUM MEDIUM.

Huds. angl. edit. 1. 284.

Tr. alpestre. Huds. angl. edit. 2. 326.

Perennial Trefoil, or Clover.

SPECIFIC CHARACTER.

Spike or head of flowers loose, subglobular, villous, sessile; corollas unequal; stipules awl-shaped, diverging; stalks subflexuose, branched, pubescent.

ROOT perennial. The stalks are much smaller, stiffer, and more pubescent than in the following species, and they are not grooved. The petioles or leaf-stalks are very long and pubescent. The leaflets are smaller and much more pubescent than those of *Trifolium pratense*: even the upper surface is as much so as the lower surface of the other, with white hairs closely pressed to the surface. The sheaths are narrower, not pubescent, but ending in much longer points, which are set with long white hairs, standing out. The heads of flowers are more lengthened out than in the *pratense*, having fewer flowers, varying in colour from the palest to full purple. On each side of the head is a small leaf, which is extremely pubescent, and the involucreal sheath from

which it rises is very hairy about the edge. The head seems to be more villous than in the following sort, and when young, is extremely so. The tube of the calyx is a greenish white, with purple lines, and ends in five long purplish segments, having many white hairs standing out, disposed as in the next sort; but the first and second pair more different in their lengths. Tube of the corolla white or pale purple; wings much longer than the keel, but much shorter than the banner, which is marked with lines of a deeper purple; this part of the corolla is frequently emarginate both in this and the next species: the keel is purple, but the wings usually white, at least in the middle within.

It is not uncommon in dry pastures.

This seems to be the plant of Mr. Hudson's *flora anglica*, but not the *flexuosum* of Jacquin, of which a plate will be given in a subsequent number.



TRIFOLIUM PRATENSE.

Honeysuckle Trefoil, or Broad Clover.

SPECIFIC CHARACTER.

Spikes of flowers close, corollas unequal, four teeth of the calyx equal, stipules terminating in an awn, stalks not upright, but rising at bottom with a bend.

Lin. spec. 1082. *Mill. dict. n.* 1. *Huds. angl.* 325. *Lightf. scot.* 404. *Wither. bot. arr.* 794. *Fl. dan.* t. 989.

Trifolium Rivin. tetr. t. 11.—vulgare *Blackw. herb.* t. 20.—pratense purpureum *Fuchs. hist.* 817.

THIS species, which is generally well known in Europe, since it has been cultivated in almost every part of it, has a small root striking right down, and scarcely ever creeping, so that the plant, at least in a cultivated state, seldom endures more than two years. The stalk is brownish red in places, grooved, white near the head of flowers, with hairs pressed close to it. Leaflets ovate, blotched with white on the upper surface, covered with hairs pressed close to it on the under, the edge not ferrate, but set with hairs. The sheaths very broad, membranaceous with strong ribs. The

heads of flowers globular, with a leaf on each side, rising from a very broad sheath, forming involucre to the head, which, when young, appears villous. The calyx whitish, ending in five long green segments, having a few long white hairs on them standing out; the second pair is very little longer than the upper pair, but the lowest single one is much longer. The tube of the corolla is white; the wings are very little longer than the keel; the banner is longer than the wings.

This valuable plant is found wild throughout Europe, in Siberia, and in North America. In this state we may perhaps hereafter figure it. The present figure was drawn from a cultivated plant raised from Dutch seed. It has been long under culture in Flanders and other countries; and has at length surmounted inveterate prejudice in most parts of these kingdoms. Though it was strongly recommended, and shewn experimentally to be excellent in the sixteenth century, yet at the end of the seventeenth, it was asked, what could be the reason why the great advantage got in Staffordshire and Worcestershire by sowing of clover, can scarce prevail with any in Cheshire and Lancashire to sow an handful upon the same sort of land*. I wish there may be no room to repeat the question, in some parts of the country, at the end of the eighteenth century.

* Houghton's Collections, vol. 4, p. 59.



LOLIUM.

TRIANDRIA Digynia.

GENERIC CHARACTER.

Calyx of one valve or leaf only, fixed or permanent, containing several flowers.

SPECIES.

Lolium perenne. Perennial Darnel.

Lin. spec. 122. *Huds. angl.* 55. *With. arr.* 120.—figured by Schreber t. 37. in *Flora Danica* t. 747. *Reliqu. Rudb.* 13. *A. Mor. hist. f.* 8. t. 2. f. 2. row 2. *Baub. theat.* 127, 128.—*Ger. emac.* t. 78. f. 2. copied in *Park. theat.* 1145. 2.—the spike only, by *Leers fl. herb. t.* 12. f. 1.—*Scheuch. agr. t.* 1. f. 7. A, B, C.—described in *Ray hist.* 1263. *syn.* 395. *Leers n.* 97. *Pollich. n.* 129, *Hall. herb. n.* 1416.

SPECIFIC CHARACTER.

Spike awnless, spicules or component spikes compressed, longer than the calyx, and composed of several flowers.

DESCRIPTION.

ROOT perennial, creeping. Stalks several from the same root, prostrate or oblique at the base, but the flowering stem upright; from a foot to 18 inches or two feet in height, and

smooth: they have several joints near the base, at a small distance from each other, but on the upper part only one or two; they are frequently red about the knots. Leaves about four inches long, and from two to four lines wide, lengthened out into a point: both they and their sheaths are smooth, except that the upper surface is a little rough to the touch. The flowers are in a spike, from four to six or seven, and even nine inches in length, composed of many spicules or spikelets ranged at a distance from each other, in two rows alternately along the common receptacle, which is flexuose, or changes its direction in a curve line, from one spicule to another: these being each lodged at the base in a hollow of the spike-stalk or receptacle, have no occasion for an inner valve to the calyx for protection, and therefore are not provided with one. The number of flowers in each spicule varies from three or four to six, seven, or eight, and even sometimes nine, ten, and eleven; but six or seven is the most common number. The valve of the calyx tapers to a point. The two inner husks, or valves of the corolla, are of the same length, or nearly so. The germ is placed between the upper of these, and two small lanceolate, white, semi-transparent substances, which Linnæus calls the nectaries. The seed easily quits the chaff.

There are many varieties of this grass, differing in size and colour of the stalk and spike, and number of flowers in each spicule: the flowers are now and then found with awns or beards: the spicules also are sometimes clustered and sometimes branched.

OBSERVATIONS.

This grass has been long well known among our farmers, under the name of *Ray-grass*, or, as they corruptly call it, *Rie-grass*, which is widely different from this. It is also

called *Crap* in some places. Mr. Ray names it *Red Darnel-grafs*. The term *Ray-grafs* is derived from the French *Ivraie*; and this species is by them called *Fausse Ivraie*.

How long this grafs may have been in cultivation, I am not able to ascertain. Neither Gerard (1597), nor his republiſher, Johnſon (1636), nor Parkinson (1640), give the leaſt hint of any uſe to which it is applied. None of the writers on huſbandry in the laſt century, whom I have now before me, as Sir Hugh Plat, Gooſe, Markham, Sir Richard Weſton, Hartlib, Gabriel Plattes, Blith, and Yarranton, ſay a word in its commendation, or inſinuate that any particular ſpecies of grafs was ſown in laying down land.

The firſt mention I find made of it for cultivation, is in Plot's Oxfordſhire, printed in 1677*.—"They have lately ſown (ſays he) *Ray-grafs*, or the *Gramen loliaceum*, by which they improve any cold, ſour, clay-weeping ground, for which it is beſt, but good alſo for drier upland grounds, eſpecially light ſtony, or ſandy land, which is unfit for ſainct ſoin. It was firſt ſown in the Chiltern parts of Oxfordſhire, and ſince brought nearer Oxford by one Mr. Euſtace, an ingenious huſbandman of Ilſlip, who, though at firſt laughed at, has been ſince followed even by thoſe very perſons that ſcorned his experiment; it having precedence of all other graſſes, in that it takes almoſt in all ſorts of poor land, endures the drought of ſummer beſt, and in the ſpring is the earlieſt grafs of any, and cannot at that time be overſtocked, its being kept down making it ſweeter and better beloved by cattle than any other grafs: nay, ſometimes they have been known to leave meadow hay to feed on this: but of all other cattle it is beſt for horſes, it being hard hay; and for ſheep, if unſound, it having been known by experience to have

* Ch. 6. par. 31, 32, 33.

worked good cures on them, and in other respects the best winter grafs that grows."—Some, he informs us, sow two bushels an acre ; but it is best to sow three, with Non-such.

Ray, in his history, (1688), relates that it is sown in a few places, and that it is excellent for fattening bullocks. In the third volume of the Oxford History of Plants by Morison and Bobart, (1699) it is said, that the seeds are gathered and sown in stiff and moist land ; and that it much esteemed, under the name of *Ray-grafs*, as food for sheep and other cattle.

According to Mr. Stillingfleet, " it makes a most excellent turf on found rich land, where it will remain. Many, he adds, are tempted by the facility of procuring the seed of this grafs to lay down grounds near their houses, where they want to have a fine turf with it ; for which purpose, unless the soil be very rich, a worse grafs cannot be sown, as it will certainly die off in a very few years entirely." This gentleman thinks that the *Ray-grafs* does not feed good venison, and presumes from hence that it is not proper for sheep, having always observed, that the same kind of ground which yields good venison yields also good mutton. If it be the natural produce of very strong or wet lands, this is easily accounted for. In such situations it is not unprolific in leaves ; but in dry upland pastures it runs much to stalks or bents. It is not well adapted to form a lawn, its foliage being of quick growth, and its flowering stems continually shooting forth*.

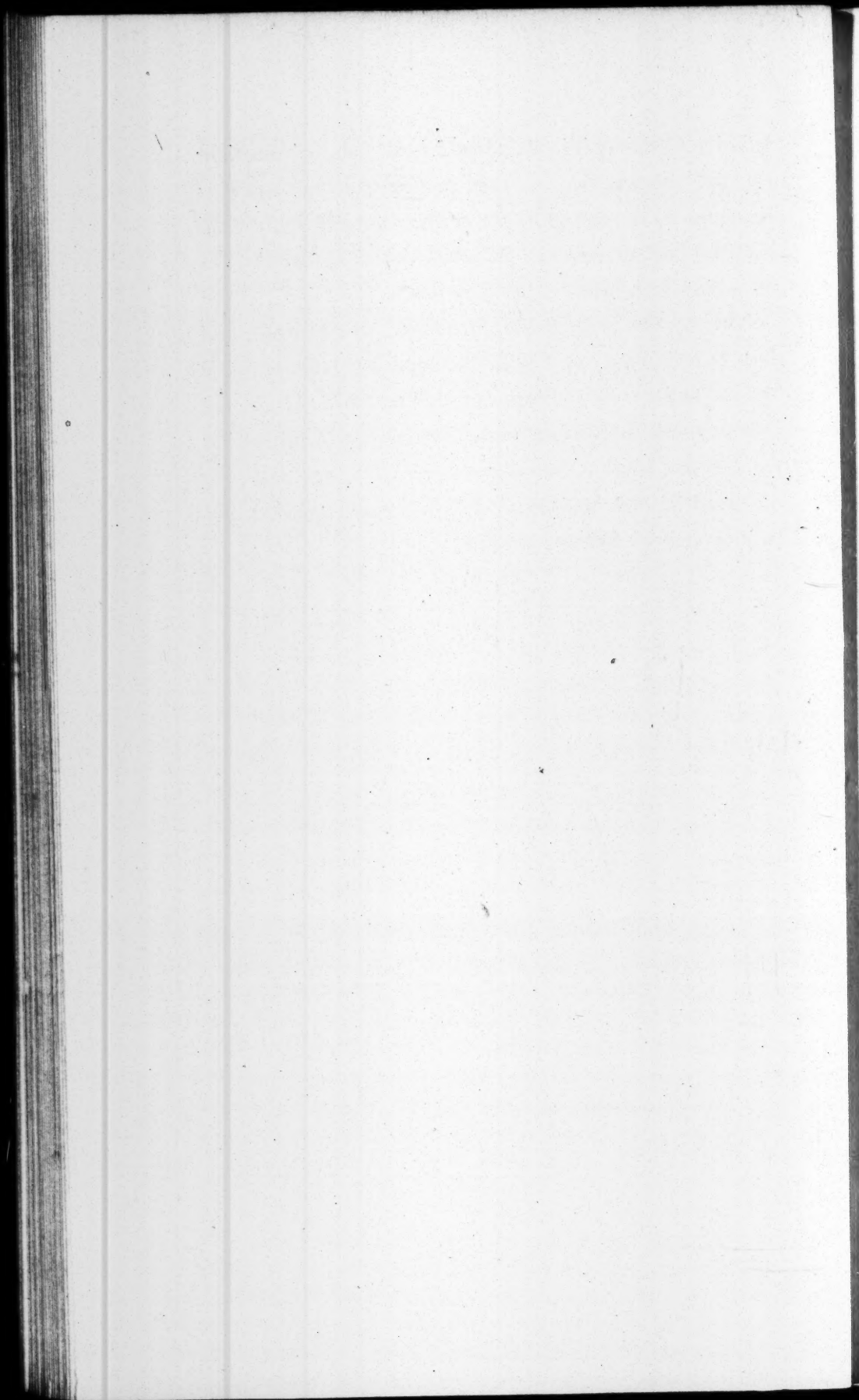
How the *Ray-grafs* comes to have been originally selected from all the rest we cannot say : probably it was accident, or perhaps because it is common, and the seeds are easily col-

* Curtis's Practical Observations on the British Grasses, Lond. 8. 1790.—p. 33.

lected. Certainly it is not adapted to all soils and situations equally. Several sorts are even preferable to it: and it is by no means the earliest of the grasses; not only the *Vernal*, but the *Fox-tail*, and the *Meadow-grasses*, all excellent in their kind, appearing earlier than this*.

That the *Ray-grass* should still be the only sort whose seed is to be had in any quantity in the shops, is a disgrace to this age and nation. Mr. Curtis has most laudably endeavoured to remove this opprobrium from us, by sowing and distributing seeds of the *Meadow-Fescue*, and other sorts, most likely to be beneficial and productive in laying down meadow and pasture lands of different qualities.

† The same, p. 4, and 65.





Drum. Engraved & Published Dec. 1791. J. P. Nodding, No. 15 Brewer Street, Golden Square.

PHLEUM.

TRIANDRIA Digynia.

GENERIC CHARACTER.

Calyx of two valves, sessile, linear, truncate, ending in two cusps or points. *Corolla* inclosed.

SPECIES.

Phleum pratense. Meadow Cat's-tail grass.

Lin. spec. 87. *Huds. angl.* 25. *With. arr.* 63. *Hall. helv.* n. 1528. *Scop. carn. n.* 74. *Pollich pal. n.* 62. *Krock. files. n.* 102. —figured by *Schreber, t.* 14. f. 1, 2. *Baub. prodr.* 10. 1. *theat.* 49. 1. *Mor. hist. f.* 8. t. 4. f. 1, 2, row. 3. *Baub. hist.* 2. 472. 2. *Park. theat.* 1170. 1. —the spike only, *Leers. herborn. t.* 3. f. 1. *Mus. rust.* 5. f. 1.

SPECIFIC CHARACTER.

Spike cylindric, ciliate; culm upright.

DESCRIPTION.

ROOT perennial. Stalks from one foot to two or three feet in height in moist meadows, but in dry soils much lower, upright, round, and smooth. Leaves lanceolate, pointed, rough on the upper surface and along the nerve; sheath streaked, smooth. Spike regularly cylindric and blunt

at the top, sometimes five or six inches long, but usually, at least in its wild state with us, much shorter. At first sight it bears some resemblance to that of the Fox-tail grass; but on examination it will be found very different in form, colour, &c. It is also rough, whereas that is smooth, and the two horns at the truncate end of the calyx in each floccule of the Cat's-tail grass, betray it immediately. The flowers are very close set on the spike.

This grass varies much in size, and in the length of the spike; it has also been observed, in common with several others, to have a leafy spike, occasioned by the seeds germinating in wet weather before they fall; one variety with a bulbous root is set down by many authors for a distinct species; but Mr. Hudson and others assure us that the root becomes fibrous when cultivated in a garden; and at best this is an equivocal character.

OBSERVATIONS.

Meadow Cat's-tail grass was much puffed about twenty-seven years ago, under the name of *Timothy-grass* *. It had this quaint name from Mr. Timothy Hanson, who is said first to have brought the seeds of it from New York to Carolina. It had then a great character in North America, where it is called *Herd-Grass*, but whether it has supported it since we cannot say. Its reputation here was short-lived, and deservedly; for it has no one good property in which it is not excelled by the Fox-tail grass; and besides this it is harsh, and late in its appearance. It is proper only for moist lands; in a dry soil it makes a pitiful appearance †.

* Mr. Wych is said to have brought it from Virginia in 1763.

† See *Museum Rusticum*, vol. 1, p. 233.—vol. 2, p. 60, and 160.—vol. 4, p. 181, 301, and 437.—vol. 5, p. 18, 42.—Curtis's *Pract. Obs.* p. 35.





Drawn Engraved & Published Decr 1798 by F.P. Neesle. 178 Broad Street, Golden Square.

ALOPECURUS.

TRIANDRIA Digynia.

GENERIC CHARACTER.

Calyx of two valves. *Corolla* of one valve.

SPECIES.

Alopecurus pratensis. Meadow Fox-tail Grass.

Lin. spec. 88. *syft.* 108. *Huds. angl.* 27. *With. arr.* 59.

Figured by *Curtis, fl. lond.* V. 12. and *præct. obs.*

t. 2. *Schreb. t.* 19. *f.* 1. *Mus. rust.* IV. *t.* 2. *f.* 9.

Stilling. t. 2. *Mor. hist. f.* 8. *t.* 4. *f.* 8. *row.* 2.—

spike, Leers herborn. t. 2. *f.* 4.—Described in

Hall. helv. n. 1539. *Pollich pal. n.* 64. *Leers n.*

43. *Krock. files. n.* 104. *Ray hist.* 1264. 1. *syn.*

396. 1. *Scheuch. 70. Curtis lond. &c.*

SPECIFIC CHARACTER.

Culm or stem upright; spike cylindric; valves of the calyx hairy and pointed; corolla awned.

DESCRIPTION.

THIS now well-known and deservedly-esteemed Grass, has a perennial root. Stalks from a foot or eighteen inches, to two and even three feet in height, according to the richness

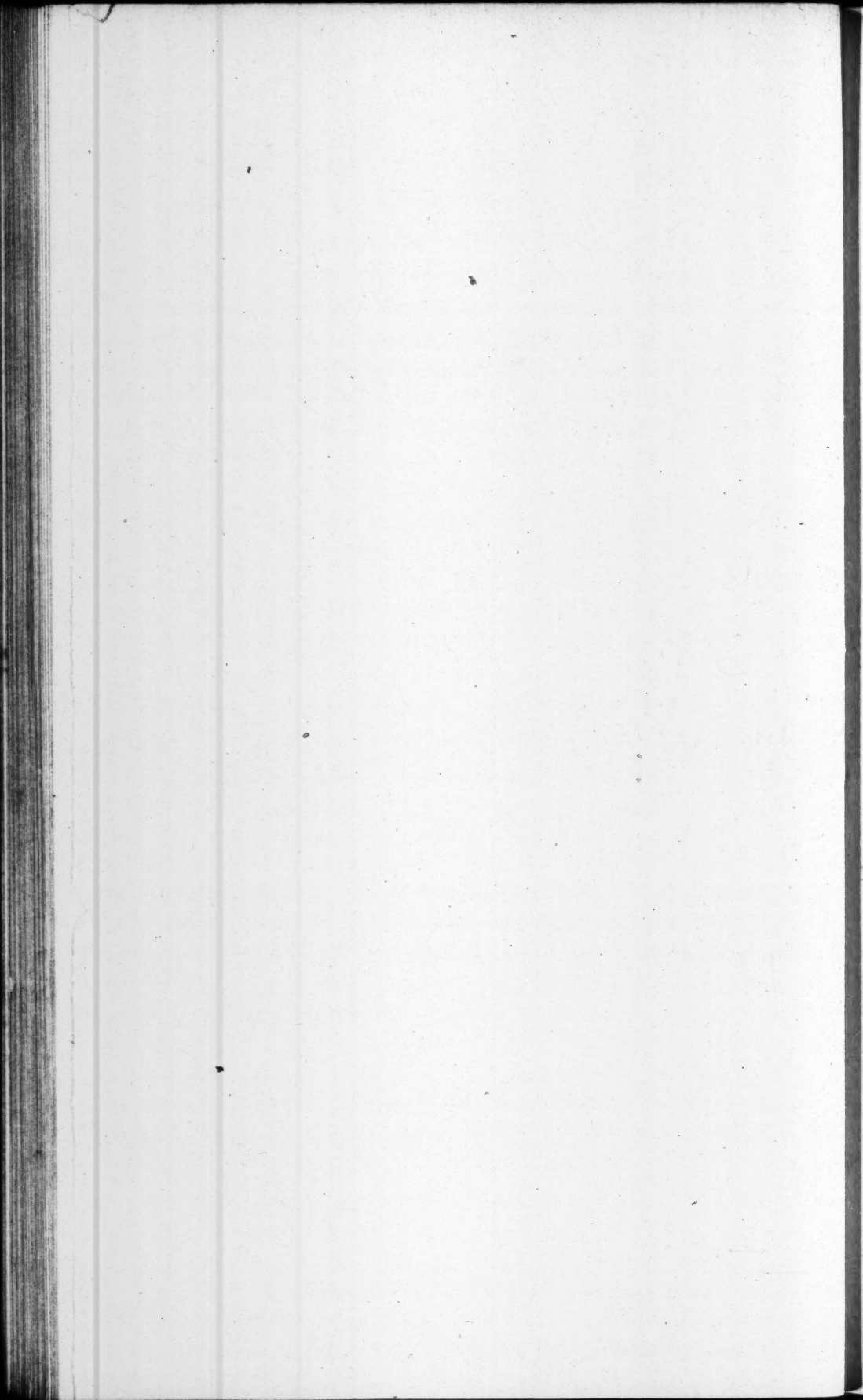


of the foil, round, streaked, smooth, with three or four knots or joints, at each of which is one smooth, broad leaf tapering to a point. Spike an inch and half or two inches in length or longer, soft and hoary. Flowers imbricate, solitary. The single valve of the corolla puts forth a jointed awn near the base, twice its length. The anthers are frequently purple, when in full vigour. The seed is very small, and covered by the glumes or chaffs, from which it does not readily fall,

OBSERVATIONS.

The Meadow Fox-tail Grass is a native of most parts of Europe, from Italy through France, Germany, Holland, Great Britain, to Denmark, Norway, Sweden and Russia: also in Siberia. It is most abundant in moist meadows, where the soil is good: neither very wet nor dry grounds agree with it. Ray affirms that it is extremely common all over England. This does not agree with our experience; for in many counties it is by no means the predominant grass; and in some places it is even scarce. About London, in the best pastures, it is certainly very common. It is one of the earliest of the grasses, producing the spike in April or May, with the Vernal-grass, and the Ladies smock. It frequently flowers twice in one season, and therefore should seem to be proper for such lands as will admit of a second crop being taken.

Meadow Fox-tail Grass undoubtedly possesses the three great requisites of quantity, quality and earliness, in a superior degree to any other: and therefore is highly deserving of cultivation on lands that are proper for it. The seed of this valuable grass may be collected without much difficulty, for it does not quit the chaff, and the spikes are very prolific. It would be superfluous to say more on a subject which Mr. Curtis has handled so copiously. See also the excellent Mr. Stillingfleet's observations on Grasses.





Drawn, Engraved & Published Jan^y 1894 by F.P. Nodder, No. 15, Brewer Street, Golden Square.

AVENA.

TRIANDRIA Digynia.

GENERIC CHARACTER.

Calyx two-valved, containing several flowers; with a writhed or twisted awn from the back of it.

SPECIES.

Avena elatior. Tall Oat grass.

Lin. spec. 117. *Hudf. angl.* 53. *With.* 112.—Figured by *Schreber* 25. t. 1. *Curtis lond.* 3. 6. *Fl. dan. t.* 165. *Morison f.* 8. t. 7. f. 38. *Bauh. theat.* 18. *Bauh. hist.* 2. 456. *Ger. emac.* 23. 1, 2. *Park. theat.* 1176. 1.—Part of the panicle, *Leers herborn. t.* 10. f. 4. *Scheuch. agr. t.* 4. f. 27, 28. *Monti t.* 76.—In *Schreber's* figure, and that of the *Flora Danica*, the root is fibrous.—Described by *Curtis*; *Hall. belv. n.* 1492. *Pollich. pal. n.* 122. *Leers n.* 88. *Krock. files. n.* 177. &c.

SPECIFIC CHARACTER.

Flowers in a panicle, two in each calyx, one perfect, with little or no awn, the other male, with a long twisted awn,

DESCRIPTION.

ROOT perennial, fibrous; in some situations, the upper part of the root, or rather the base of the stalk, becomes

knobby*, as represented in the figure; and in this state it has been given as a distinct species†. Stems from two or three to five feet high, round and smooth, having four or five joints. Leaves six or seven inches, and even a foot in length; about a quarter of an inch in breadth. Panicle from a span to a foot long, consisting of numerous branches unequal in length, directed mostly to one side; when young contracted, spreading when in full flower, afterwards contracting again, and bending a little at top. In general, there is only one awn to each spicule or pair of flowers; but sometimes each flower has an awn, one longer than the other‡.

OBSERVATIONS.

Tall Oat-grass is common on banks, in hedges, on the borders of fields, and sometimes in meadows, especially wet ones: flowering in June and July.

In arable land it is very troublesome from its creeping roots, and is one of those grasses which are confounded under the name of *Quich* or *Couch*.

It is an early grass, very productive, and produces a very plentiful aftermath. It is cultivated abroad, and may be no bad substitute for Meadow Foxtail-grass§. The stem and leaves are by no means coarse, but soft, tender, and of a pleasant taste. It may be propagated with facility.

Some foreign writers have set this down as our *Ray-grass*. That they are very different will immediately appear from comparing the two figures.

* Curtis lond.

† See Royen, Bauh. pin, Ger. emac. &c.

‡ Curtis lond.

§ Curtis Pract. Obs. 22,

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LATHYRUS.

DIADELPHIA Decandria.

GENERIC CHARACTER.

Calyx the two upper segments shorter than the other three. (1) *Style* villous on the upper part, broader upwards. (2)

SPECIES.

Lathyrus latifolius. *Broad-leaved Everlasting Pea.*

Lin. spec. 1033. *Huds. angl.* 316. *With.* 772. figured in *Miller's illustr. Fl. dan. t.* 785. *Rivin. tetr. t.* 40. *Mor. hist. f. 2. t. 2. f. 3.* *Garid. prov.* 108, at p. 300.—described in *Miller's dict. n.* 13. *Hall. herb. n.* 433. *Krock. files. n.* 1167. *Baub. hist.* 2. 303. *Ray hist.* 894. from him, &c.

SPECIFIC CHARACTER.

Each peduncle sustaining several flowers; (3) each tendril (4) furnished with a pair of leaves; (5) the leaves lanceolate, (6) or ovate; (7) membranaceous wings to the stem between the joints. (8)

DESCRIPTION.

ROOT perennial. Stalks several, thick, climbing by means of their tendrils to the height of six or eight feet, or

even higher in woods, where it grows spontaneously: these die to the ground in autumn, and new ones rise in the spring from the same root. Leaves stiff, marked with strong ribs, rolled in at the edge, blunt at the end, but terminating in a little point or bristle; they are always in pairs, and supported by a petiole or leaf-stalk, which is winged: (8) at the base of this are large stipules, or leaf-scales, shaped somewhat like the head of a halbert. (9) The tendrils or clasps are multifid or branched. The peduncles or flower-stalks are eight or nine inches long. Each flower has an awl-shaped bracte or flower-scale at the base of the pedicle or little stalk which immediately supports it. The blossoms are of a pale purplish rose colour. The pods are an inch and an half long, and half an inch or more in breadth. This species is distinguished from the narrow-leaved sort, (*L. fylvestris*) by the superior breadth of the leaves, and by the greater abundance as well as largeness of the flowers.

OBSERVATIONS.

This plant is a native of many parts of Europe, in hedges and woods. It was observed in the Cambridge-shire woods 130 years since by Mr. Ray, and it still continues there. The time of flowering is the end of June, or the beginning of July.

It is a shewy plant for shrubberies, wilderness quarters, arbours, and trellis-work. Bees resort much to it, and the flowers furnish them with abundance of honey. The plants of the leguminous class in general afford a wholesome and palatable food to cattle; and it may be presumed that this, which is so nearly allied both to the pea and the vetch or tare, is not among the worst. It yields a great quantity both of green fodder and seeds; but in what degree cattle

might relish it we cannot say, Any gentleman would deserve well of his country, who would make a course of experiments on the leguminous plants, such as the *Everlasting Peas*, *French Honeyfuckle*, the various sorts of *Vetch*, *Trefoil*, *Medick*, &c. which we hope to bring our readers better acquainted with in the course of this work.



SPECIES.

Trifolium Rubens. Long-spiked Trefoil.

Lin. spec. 1081—figured by *Jacquin fl. austr.* 4 t. 385.
described also by him, p. 44. *Hall. helv. n.* 375.
Scop. carn. n. 925. *Pollich. pal. n.* 700. *Krocker
files. n.* 1202.

SPECIFIC CHARACTER.

Stalk upright, leaves finely ferrate, spikes long and
villous, corollas monopetalous.

DESCRIPTION.

THIS is a large elegant Trefoil. Stalks one or more, simple, upright, strong, round, except that they are a little flattened towards the top, coloured, from a foot to near two feet in length. Leaves oblong, elliptic, or lanceolate, three or four inches in length, not unlike those of *Tr. alpestre*, (t. 1.) naked or void of hairs on both sides, finely ferrate round the edge by means of the veins running out into small curved points directed towards the top, shorter and longer alternately. The stipules, with their sheaths, are very large, in a manner covering the stalk, and are not hairy: the former are sometimes obscurely ferrulate, and the latter, especially the upper ones, are much inflated. There is usually only one spike of flowers to a stalk, but in gardens sometimes there are two. The spike is at first sessile, and concealed within the floral sheaths, with a leaf on each side

of it; but as it advances it becomes pedunculated: it is of an oblong oval or cylindric form, two or three inches in length, upright, and the flowers are very close set. The calyx of each little flower is in reality smooth, but the teeth having long white hairs on them, which spread very much, the whole has the appearance of being hairy: the four upper teeth are very short, but the fifth tooth is as long as the whole corolla, and at least three times as long as the other teeth. The corolla is of a dark red purple, and has a long tube; the banner is ovate and sharp; the wings bluntish, spreading, or rolled back, of the same length with the banner, but of a paler colour; the keel is shorter, and of a darker purple.—Linnæus has marked this Trefoil as annual, but there is no doubt of its being perennial.

OBSERVATIONS.

It is a native of the South of Europe, in woods, and begins to flower in June. As far as we know, it has not been cultivated for cattle; it seems, however, to be of a good quality, and to be sufficiently productive.

Jacquin's figure is drawn from a much taller plant than ours, and more resembles *Tr. Alpestre*. The spike differs much in length, from one inch to four: hence Caspar Bauhin's two species—*spica oblonga rubra*, and *longissima rubente*.
pin. 328. *n.* 2, 3.



Drawn, Engraved & Published, Feb. 7. 1792 by R. P. Widdow, No. 21. Brewer Street, Golden Square.

QUERCUS.

MONOECIA Polyandria.

GENERIC CHARACTER.

MALE. *Calyx* subquinquefid. *Corolla* none. *Stamens* five to ten.

FEMALE. *Calyx* one-leafed, quite entire, scabrous.
Cor. none. *Styles* two to five. *Seed* one, ovate.

SPECIES.

Quercus Robur. Common Oak.

Lin. spec. 1414. *Huds. angl.* 421. *With.* 1083. *Hall. helv. n.* 1626. *Scop. carn. n.* 1184. *Pollich. pal. n.* 909.

SPECIFIC CHARACTER.

Leaves deciduous, smooth, oblong, sinuate; fruit oblong.

VARIETIES.

1. *Qu. pedunculata.* True British or Naval Oak.

Lin. syst. 858. 17. β . *With.* 1084. β . *Mill. dict. n.* 2. Figured here t. 10.—in Hunter's edit. of Evelyn's *silva*, p. 67. *Ger. herb.* 1156. *emac.* 1339. 1. & 1340. 2. *Park. theat.* 1386. 1. & 1390. 1. *Bauh. hist.* 1. 70. f. 2. *Lob. ic.* 2. 155. 1. *Fuchs. hist.* 229. *Matth.* 204.—described by *Pollich. n.* 909. See Ray's *hist.* 1385. and 1386. IV.

Q. cum longo pediculo. Baub. pin. 420.

Leaves sessile, or nearly so; acorns on fruit-stalks, single or two together.

2. *Q. sessilis. Sessile-fruited Oak.*

Huds. angl. β. With. α Mill. dict. n. 1. Hall. β. Ray hist. 1384. I.

Figured here, t. 11, 12.—in *Baub. hist. 1. 70. f. 1. Fuchs. hist. 229. the acorn only.*

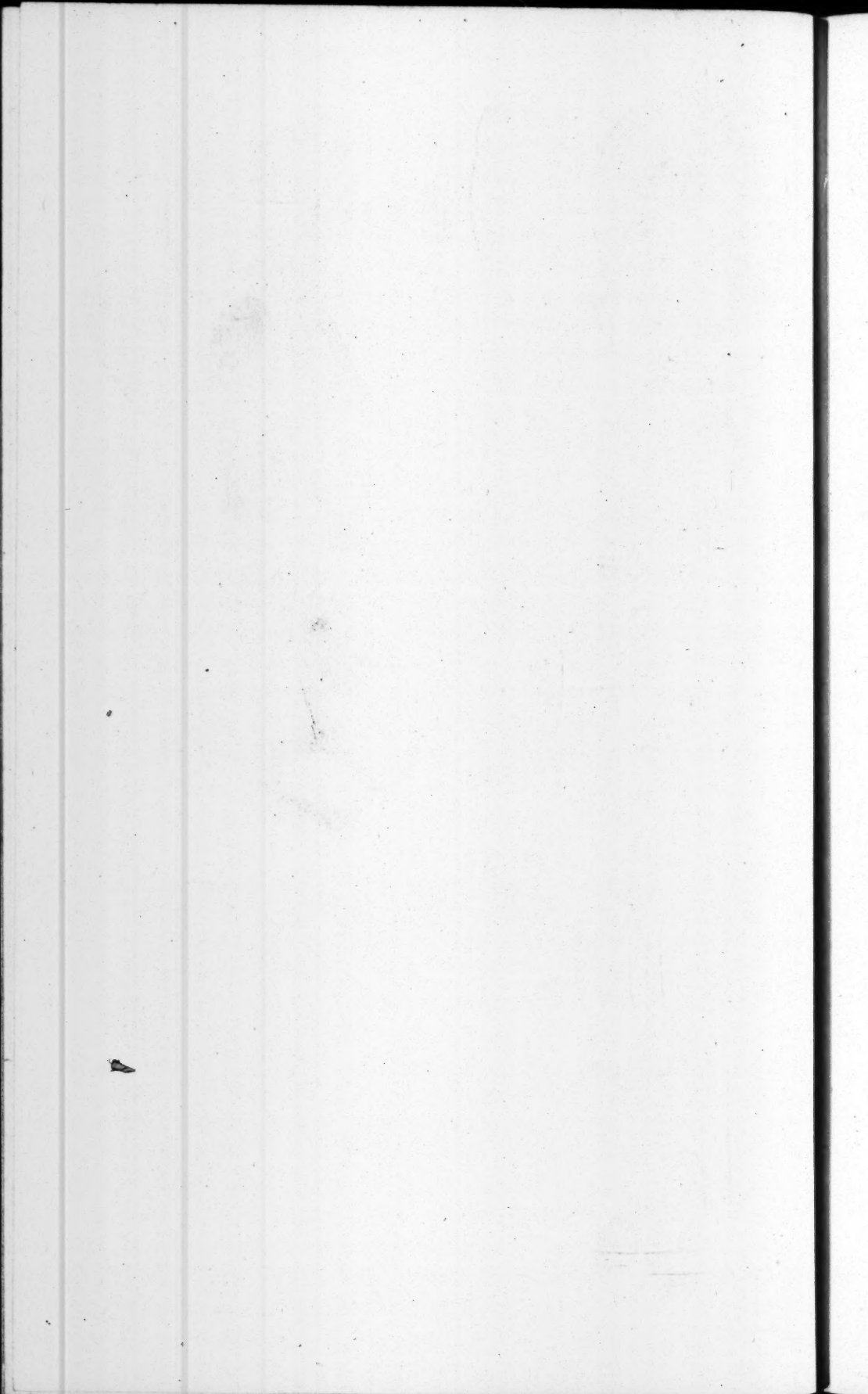
Q. quæ brevi pediculo est. Baub. pin. 419. Ray. syn. 440. 2.

Leaves petioled or on footstalks; acorns sessile, in clusters.

IT is observed by Monf. Du Hamel, that Oaks in forests being propagated from the acorn, there are so many varieties, that it is difficult to find two resembling each other in every respect*. This is in great measure true, with respect to the shape and size both of the leaves and fruit, and some other subordinate circumstances. He, following Tournefort, sets down the varieties which are to be found in the pinax of Caspar Bauhin, to the number of fourteen, and adds some others from Tournefort's corollary, &c. making twenty-three in the whole: but out of these seven are natives of America or the Levant, and are probably different species. Boerhaave gives only five sorts in his catalogue of the Leyden garden; but it is said that he cultivated there no less than seventy species: if so, this number must have included many distinct species of Oak, as well as many varieties of the common one.

* *Traité d'Arbres. 2. 204.*







Monf. Foucheroux, in an ingenious effay on this fubject, printed in the Memoirs of the French Academy *, remarks, that Oaks commonly ufed for timber may be thus diftinguifhed. 1. *Q. latifolia mas, quæ brevi pediculo eft.* C. B. 2. *Q. cum longo pediculo* C. B.—3. *Q. foliis molli lanugine pubefcentibus,* C. B. called in French *Chêne noir* from the dark colour of the wood, and *Chêne blanc* from the white down on the under furface of the leaves. This he affirms to be the common Oak of England.

He thus describes them.—1. The firft bears abundance of acorns, differing in fize; they are often eaten by infects, and are therefore probably not fo bitter as fome others. The leaves are large and wide; the finufes circular; the nerves beneath very prominent; the colour deep green within, and a brighter green on the outside; they are fet on a very fhort footftalk. The bark is fmooth and whitifh. The wood white, and eafy to cleave.

Cafpar Bauhin fays that the acorns are of a middling fize; the cup only puftuled with a rough kind of fhagreen; and that they come out three or two together, feldom fingle, at the ends of the twigs. He describes his *Q. latifolia foemina* as being in every refpect fmall, with the leaves as it were curled from the frequency of the finufes or gaffes. The acorns five or fix together, but frequently three or four, feldom two, and very feldom fingle; but often almoft round, imperfect and continuous with the cup.

2. The fecond has the leaves on a long footftalk, which is narrow, the green is not fo deep, the finufes are more deeply cut. The acorns are of different fizes, and in great quantity, on peduncles of different lengths; they feldom ripen favourably. The bark is brown and rugged. The wood is brown, and it cleaves eafily, becaufe the fibres are ftraight.

* For 1781, p, 49, &c.

According to C. Bauhin, it is peculiar to this species to have one or two acorns hanging down from a long fruit-stalk. The cup is covered on the outside with more succulent protuberancies.

3. The third is more common in certain small portions of woods than in forests of great extent. The sap rises sooner than in the others. The buds appear woolly when they are pushing into leaf in the spring, and it is distinguished principally by the whiteness that appears on the young leaves, whilst the others are of a beautiful green; this whiteness is occasioned by the down on the under surface, and particularly by the little hairs on the midrib: this down disappears as the leaf grows bigger. The leaves never become so thick as in the other sorts, nor of so deep a green: they are long in proportion to the breadth; the sinuses are deep and long, and the footstalk is longer than in the first and second. The acorns are much enveloped in the cup, which commonly falls off with them; and the fruit-stalks are very short. They are in clusters, attached to the twig itself, and at its extremity; their colour is blackish: swine and birds do not seem to be fond of them, probably on account of their bitterness: worms, however, attack them, they are therefore often faulty; and as they ripen early, the gathering of them is uncertain. The wood is of a deep reddish brown, very like that of old Chestnut; the fibres are very much twisted; the rings approach near to each other; the sap-vessels are small and close together, yet distinct and apparent, which is not the case in Chestnut. The specific gravity of the wood is not so great as in some other sorts; probably, therefore, it will not support so great a weight. This is the true *Robur* of the ancients, and deserves to be cultivated in preference to many others, as it unites several

good qualities, and contains more heart in proportion than others. It is not common, because the acorns seldom ripen, and are subject to be eaten by insects : perhaps also because being of slower growth, and not appearing so handsome, it may have been rejected in plantations.

This sort of Oak, according to Monf. Fougereux, is what has been taken by builders for Chestnut, in ancient edifices, from its colour, from splitting easily, and insects not attacking it. But it appears that the organization of the vessels in Chestnut is very different from that of Oak ; that the annual increase of the former is about double that of the latter ; and that although the specific gravity of Oak varies in different soils, yet upon the whole it is greater than that of Chestnut. Monf. Daubenton also having examined and compared pieces of old timber, which the workmen called Oak and Chestnut, found them both to be Oak of different sorts, varying in specific gravity, but agreeing in colour, grain, and all parts of their organization. They differed from true Chestnut principally in the transverse section having no apparent medullary processes*.

Our first species or variety seems to be the second of Monf. Fougereux, and our second to be his first ; the third of Monf. Fougereux is probably only an intermediate variety. We have founded our distinction upon two obvious and seemingly permanent characters of the leaf and fruit ; and we have given three exact figures, taken from living specimens of trees which may easily be examined. The first (t. 10.) was drawn from a branch of the genuine British Oak, sent us by Mr. Nichols, from the New Forest in Hampshire. The second (t. 11.) from a specimen with which we were favoured by

* Mem. acad. 1781. p. 295.

Mr. White, from Norwood in Surry, where it is by no means uncommon. And the third (t. 12.) from a branch which we received from Mr. Nichols out of the New Forest, where it is known by the name of the *Durmast Oak*.

The Norwood Oak, though it has the essential characters of the *Durmast*, yet does not recede so far from the true Oak as this; for the leaves bear a greater resemblance to the first than to the third, without, however, having the contours of the sinuations so bold and rounded as in that.

The *Durmast Oak* differs very widely from the true British species, not only in the essential characteristics of the petioled leaves, and sessile clustered acorns, but in several other remarkable circumstances. The whole tree has much the air of the Chestnut, and is of a freer growth than the true Oak; the bark is of a lighter colour and smoother; the wood not so strong or of so firm a texture; the leaves are rather ferrate than sinuate about the edge, with five, six, or seven sharp indentures on each side; whereas in the common Oak there are only three or four, forming wide sinuses blunt at the end; they are of a yellow green on the upper side, and a pale green on the under; in the specimens, which we received in October, the under surface was of a hoary gray colour, with the ribs inclining to purple; an appearance which the leaves of the common Oak never put on. These, together with the flowers and fruit, are said to appear later in the season than those of the first sort; and the leaves continue longer on the trees, sometimes the whole winter. This Autumn they continued in tolerable vigour, after the leaves were fallen from the common sort. The *Durmast Oak* grows to as large a size as that, upon similar soils. Of this Mr. Nichols gives an instance in a tree which was felled

in Langley wood, and sent to the dock yard at Portsmouth, containing twenty-three loads of square timber *.

Gentlemen who have an opportunity, will enquire whether the Oak with acorns on short fruit-stalks, said in Ray's Synopsis to have been observed by Mr. Bobart in Bagley wood, and divers other places, and about Newbury to be called the *Bay-Oak*, is the same with the *Durmast Oak* of the New Forest: if so, it might with more propriety be named the *Chestnut-Oak*. It is said in the Synopsis, that the leaves are of a darker green, and less deeply sinuate than the common sort. They will also enquire, whether that which is called in some places the *Fir-Oak*, be the same with this, or in what respects it differs.

There are many varieties of Oak which dealers in timber and woodmen distinguish by their use, qualities, and accidental circumstances; and to which they give different names; but as these are merely local, and not founded on permanent characters, it is difficult to ascertain them. But if it should appear that an Oak of an inferior quality has been widely disseminated; and is perhaps likely to be preferred on account of its freer growth and more promising appearance; it is of great importance to distinguish it, that we may not be imposed upon in future by a specious outside. It was probably for want of this knowledge, as Mr. Nichols observes, that some of the inclosures made in the New Forest at the beginning of this century were planted with acorns taken from the *Durmast Oak*. And it is much to be feared,

* Mr. Nichols is Purveyor of the Navy for Portsmouth dock-yard, and has published "Observations on the propagation and management of Oak-trees in general, but more immediately applying to his Majesty's New-Forest in Hampshire." A treatise that well deserves the attention of the public.

that in weeding or thinning new-made plantations and woods, those young standards which would come to the most valuable timber, are removed to make way for such as are of an inferior quality. Now if it should appear from experience that the characters here delivered are permanent ; and that Oak-trees which bear sessile leaves, with the acorns on fruit-stalks, are of a superior quality as to their timber, to those which have the leaves on foot-stalks with sessile fruits ; then we shall have an easy clue to direct us in our choice of trees for planting : for although it will be many years before the trees will be known by their fruit, yet they may from the first be distinguished by their leaves ; and when planters become better acquainted with them, they will see the difference immediately by their general air and habit.

We recommend it therefore to planters of Oak to observe carefully whether trees raised from the peduncled and sessile acorns respectively preserve the characteristic differences here set down *. For if they are found to do so, they will probably also keep the same difference in the quality of the timber. Enquiry also should be made, whether Mons. Fougereux is right in his assertion, that the common English Oak is that which has a whiteness or woollyness on the young leaves ; or whether that circumstance may not be merely accidental, and that trees of the true sort of Oak with acorns on long fruit-stalks, without this pubescence as well as with it, may be intermixed in our woods and forests, equally excellent for timber. The time for making this observation is the end of April ; the buds usually begin to burst about the middle of the month, or a little later, according to the season and

* We have procured ripe acorns from different Oaks, and have put them into the hands of a gentleman who will make the experiment.

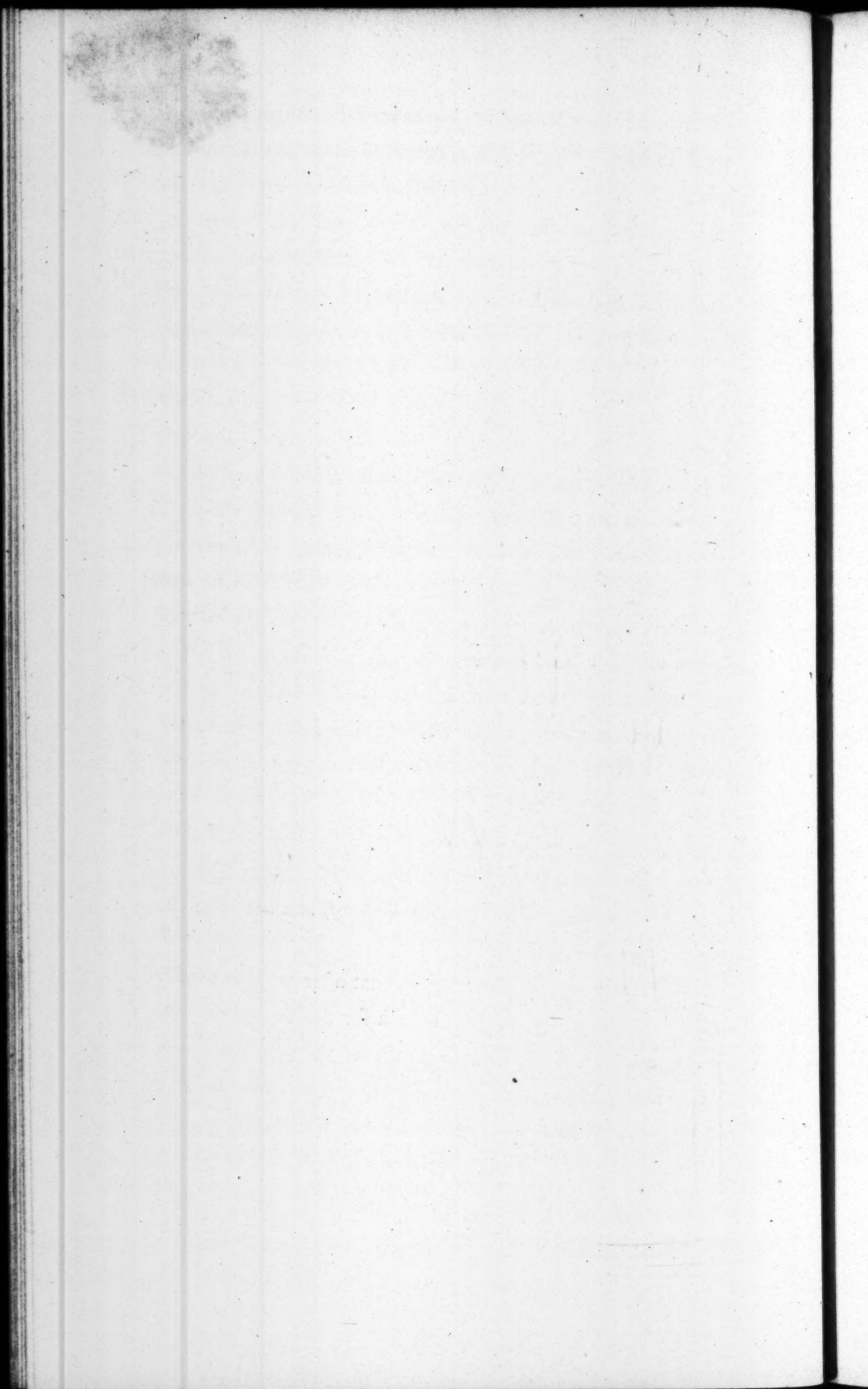
other circumstances, and the leaves are fully expanded the first week in May. The flowers appear earlier, namely, in the first week of April. The male flowers come out from the buds in little bunches hanging down, and about three inches in length; above these are the female flowers, sitting close in the bud, three or four together, of a red colour; with some reddish scales at the base of them, which afterwards become the cup of the acorn*.

Mr. Ray, with his usual accuracy, distinguished the Oak with acorns on long fruit-stalks, from that which has the fruit sessile or at least on very short fruit-stalks; and was of opinion that they are specifically different. He erred in affirming that the former only is found wild in England; but this error was corrected afterwards in the Synopsis. Mr. Miller, who is of the same opinion with Ray as to the specific difference of these two Oaks, has blundered strangely in making that which has sessile acorns the Common Oak of this country, and in referring us only to the wilds of Kent and Sussex for the other: and this mistake has been copied by Dr. Hunter in his edition of Evelyn's Silva.

The Lucombe Oak, described in the Philosophical Transactions; and in Hunter's Evelyn from thence, is the *Quercus Cerris* of Linneus, a species totally distinct, and native of the southern parts of Europe.

It is scarcely necessary to observe, that after we have selected the best species or variety of Oak for timber, much will depend upon soil and situation, the age of the tree, the season in which it is felled, and the care which has been taken in training it. When we recommend the culture of a particular sort of Oak, we advert principally to Naval purposes; for all the sorts or varieties are excellent in their way for different uses.

* See Hunter's figure, and Læfel, fl. pruss. n. 69 at p. 211.





TRIFOLIUM FLEXUOSUM.

Jacqu. austr. 4. t. 386. *Wither. bot. arr.* 795.

Tr. medium. *Lin. suec. edit.* 2. 558.

Tr. alpestre. *Lightf. scot.* 406. *Fl. dan.* t. 662.

Tr. pratense purpureum majus. *Raii hist.* 994.

Tr. purp. maj. fol. longioribus et angustioribus,
flor. saturationibus. *Raii syn. ed.* 3. 328.

SPECIFIC CHARACTER.

Spikes of flowers loose; corollas almost equal; stipules awl-shaped, converging; stalks flexuose, branched.

DESCRIPTION.

THIS species is at first sight very distinct from those which have been already figured in the three first plates, though it has been confounded with them all. The root is creeping, more woody, and more firmly fixed in the ground, than in *Tr. alpestre* or *pratense*. The stalk is flexuose, angular, and branched. The leaf-stalks are somewhat hairy, but not villous; they are longer than in *alpestre*, and divaricate. The leaflets are broader; most of the parts also are larger, and of a darker colour. The stipules and sheaths are broader, with more frequent veins, usually purple. The heads or spikes are generally peduncled; and in a wild state there is more frequently one than two at the end of each

branch. The calyx is mostly smooth, with larger teeth than in *alpestre*. The corolla is of a paler purple, especially in the wings, and has a sweet scent. It differs evidently from the species figured in the second plate, in the stipules and leaves, in having the heads of flowers larger, more full, not so loose, and rising from the sheath on a peduncle.

OBSERVATIONS.

This species is wild in most parts of Europe, both in chalky and clayey soils; in dry lofty pastures, but especially in hedges, bushy, and woody places, where it has the appearance of being very proper for cultivation. It is affirmed, however*, that in a good loose soil it generally grows more slender, and the spikes become smaller: but since it is very luxuriant on eminences, in a dry, hard, uncultivated clay, it might perhaps succeed in our stubborn hungry clays.

This does not seem to be the *Marl-grass* or *Cow-grass*, which has been strongly recommended for cultivation†.

The three species figured here, and in plates one and three, have been admirably distinguished from each other, and the rest of the clovers, in a most elaborate treatise, by Mr. Afzelius‡.

* By Jacquin and Afzelius.

† See Young's *Annals of Agriculture*, vol. 3. 217.—4. 122.—and 6. 230.—A figure of this will be given as soon as the plant flowers.

‡ See the first volume of the *Transactions of the Linnean Society*.







DACTYLIS.

TRIANDRIA Digynia.

GENERIC CHARACTER.

Calyx two-valved, compressed, the inner valve larger than the outer; both keeled.

SPECIES.

Dactylis glomerata. Rough Cock's-foot grass.

Lin. spec. 105. *Huds. angl.* 43. *Witb. bot. arr.* 94. *Relb. cant. n.* 74. Figured by Schreber, t. 8. f. 2. *Fl. dan. t.* 743. *Mor. hist. f.* 8. t. 6. f. 38. *Bauh. prodr.* 9. f. 1. *theat.* 45. 1. *Mus. rust.* 5. t. 5. *Park. theat.* 1182. 5. *Bauh. hist.* 2. 467. 1. *Barrel. ic.* 26. f. 1, 2. *Leers herborn. t.* 3. f. 3. *Scheuch. agr. t.* 6. f. 15. Described by Pollich. *pal. n.* 98. *Neck. gallob.* 58. *Leers herb. n.* 57. *Krock. files. n.* 148. and by Haller. *n.* 1512, and Scop. *n.* 111. under the name of *Bromus*.

SPECIFIC CHARACTER.

Panicle glomerate, the flowers all directed the same way.

DESCRIPTION.

ROOT perennial. Stalks from two to three feet high, rough towards the top, having three, four, or five smooth,

purplish knots on each. *Leaves* six inches long, or more, and three or four lines broad, somewhat of a sea-green colour, and very rough on both sides with extremely minute prickles. *Panicle* very close, frequently coloured; peduncles alternate, stiff, rough, with a callous tumour at the base of each; spicules almost sessile, having two or three, sometimes four, flowers in each calyx; these are pressed close; during the time of flowering diverge; and, all pointing the same way, serve to explain what Linnæus means by *panicula*, or *spicula secunda*, and *flores secundi*. Calyx pubescent, frequently ciliate, rough; inner valve twice as large as the outer, and awned; equal to the floscules, if there be only two, but shorter if there be more: valves of the corolla rough, edged with white, blunt, with a short awn at the end; in the last floscule this is very short, and sometimes there is none; the inner valve is scarcely shorter than the outer, with the end sharply cloven. Each flower has two very small lanceolate nectaries, much pointed. Filaments twice the length of the corolla; anthers yellow, or purple, turning finally white.

OBSERVATIONS.

Few grasses are more common than this. From its flourishing under the drip of trees it has obtained the name of *Orchard-grass*; and from its roughness and hardness, it is called *Rough-grass* and *Hard-grass*. It flowers from June to August.

This is a very rough, coarse grass, but extremely hardy, productive, and rather early. Its thriving in the shade may be a recommendation; but the head is so large, that in heavy rains it is apt to be laid.

CORONILLA.

DIADELPHIA Decandria.

GENERIC CHARACTER.

Calyx two-lipped; the upper lip having two connate teeth; the lower, three smaller ones. *Banner* scarcely longer than the wings. *Legume* contracted between the seeds.

SPECIES.

Coronilla varia. *Purple Coronilla.*

Lin. spec. 1048. *Hall. helv. n.* 367. *Scop. carn. n.* 913.

Pollich. pal. n. 691. *Riv. tetr. t.* 94. *Park. theat.*

1088. 3. *fig.* 1089.

SPECIFIC CHARACTER.

Herbaceous; legumes upright, cylindric, swelling, numerous; leaflets very many, smooth.

DESCRIPTION.

ROOT creeping widely, by which this plant increases greatly, and overbears whatever grows near it. *Stalks* five or six feet high when supported; but if not, trailing on the ground; they die every winter, but fresh ones shoot out in the Spring. *Leaves* pinnate; leaflets oblong, small, some in pairs, others alternate, with a single one at the end; the lowest usually approximate to the stem, like stipules, or are

very small. The flowers come out many together in roundish bunches, on peduncles which are about the same length as the leaves: the corollas vary from a deep to a light purple, mixed with white. The legumes or pods are slender, and from two to three inches in length.

OBSERVATIONS.

This handsome plant is a native of France, Germany, Denmark, &c. It flowers all the Summer from June, and frequently till the Autumn frosts stop its career. Almost any soil and situation suit it; but it thrives best in a warm sunny exposure. It was cultivated in the time of Parkinson (1640).

Mr. Miller affirms that it was formerly employed for feeding of cattle. However that may be, it certainly is very productive, and seems to be of a good quality: we recommend it therefore to be tried, among other leguminous plants, for the purpose of procuring abundant and palatable feed for horses, kine, and even sheep.





TRIFOLIUM LUPINASTER.

Bastard Trefoil, or, Bastard Lupin.

Lin. spec. 1079. *syft.* 689.

Figured in *Gmel. fib.* 4. t. 6. f. 1.—also in *Buxb. act.*
2. t. 20. at p. 346.

Described by *Gmelin* at p. 19. n. 27. *Amman ruth. n.*
143, 144. and *Buxb. act. petrop.* 2. p. 344. under the name of *Lupinaster*.

SPECIFIC CHARACTER.

The heads of flowers halved ; the leaves quinate or in fives, and sessile ; the legumes or pods containing several seeds.

DESCRIPTION.

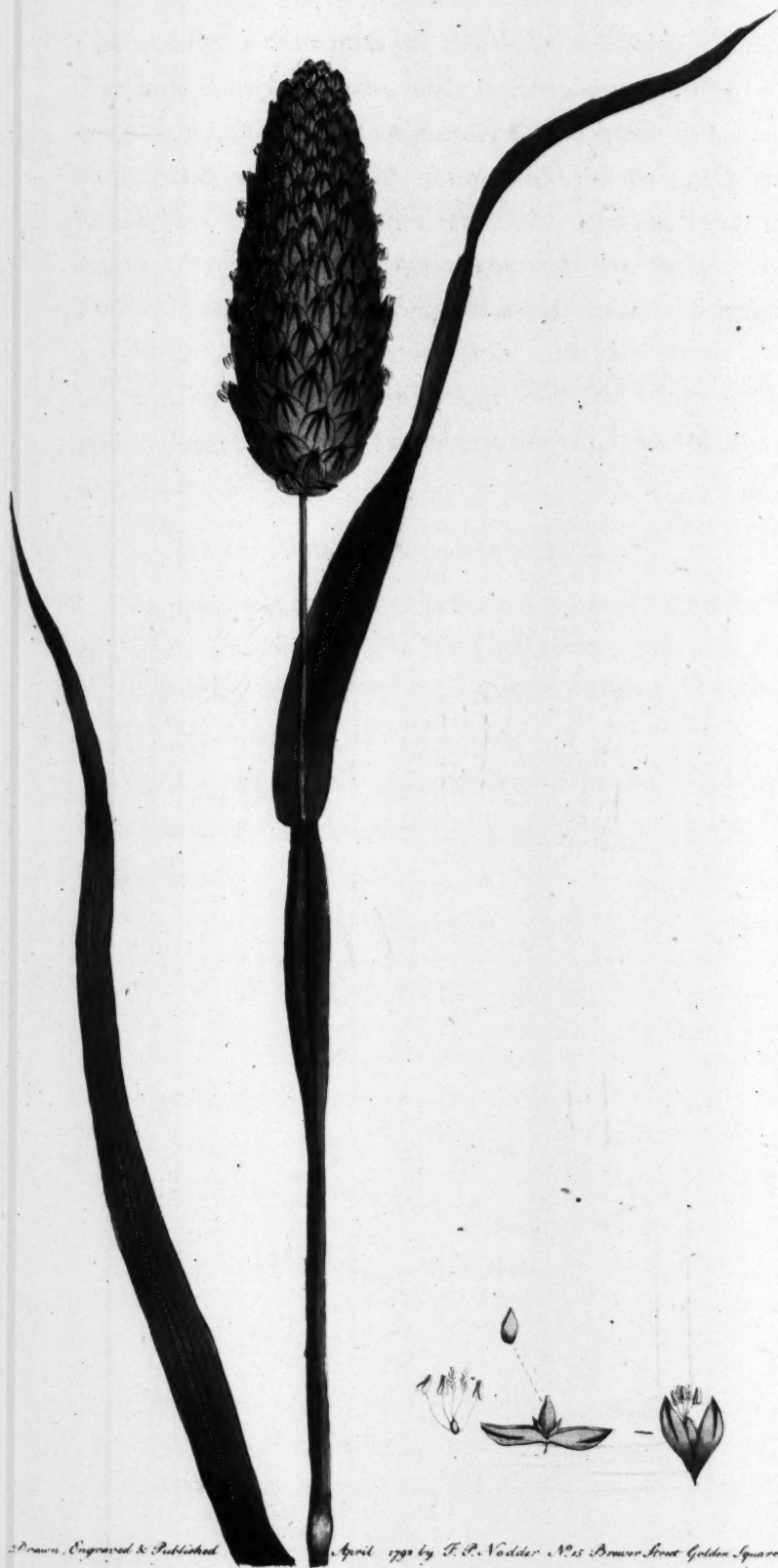
THE remarkable circumstance of having more than three leaflets, usually five, to each leaf, is sufficient to distinguish this from the other species of the genus, which has obtained the name of *Trifolium* and *Trefoil* from its ternate leaves. We may observe, however, that the root is perennial: the stalks several, from a foot to eighteen inches in height, round, with several (7, 8) joints, green or purplish ; at each joint is a sheath terminating in a digitate leaf, with the number of leaflets varying from 3 to 6 or 7 ; but the extreme numbers are rare, and 5 is the most common ; the leaves have more resemblance to those of a *Lupin* than of a *Tre-*

foil, and hence the names of *Lupinafter* and *Bastard Lupin*. The leaflets are lanceolate, finely serrate about the edge, and unequal in size. There are usually several heads at the end of the stalk, of a roundish form, with the flowers pretty thickly set; the three lower teeth of the calyx are nearly the length of the keel, the two upper ones are shorter; the banner of the corolla is oblong, near half an inch in length, and purple; the wings are broadish, and pale purple; the keel is pale, and of the same length with the wings. The pod is longer than the calyx, pale brown, and contains 4 or 5 seeds.

OBSERVATIONS.

This species is a native of Siberia, and, as we are informed, in the catalogue of the royal garden at Kew, was first cultivated here in 1763, by Mr. James Gordon. It flowers in July and August.

We have figured this rather on account of its singularity, than from any expectation of its being useful for economical purposes.



PHALARIS.

TRIANDRIA Digynia.

GENERIC CHARACTER.

Calyx two-valved, one-flowered, keeled, valves equal in length, inclosing the corolla.

SPECIES.

Phalaris canariensis. Manured or cultivated Canary-grass.

Lin. spec. 79. *Huds. angl.* 23. *Withering* 65. Figured by *Schreber*, t. 10. f. 2. *Bauh. theat.* 534. *Bauh. hist.* 2. 442. 2. *Ger. t.* 80. f. 1. *emac.* 86. *Park. theat.* 1163. 1. *Mor. hist. f.* 8. t. 3. row. 3. f. 1. Frustrification by *Leers t.* 7. f. 3. Described by *Scheuchzer p.* 52. *De Necker gallob. p.* 31. *Krocker files. p.* 80. *Withering, &c.*

SPECIFIC CHARACTER.

Panicle awnless sub-ovate, in shape of a spike; glumes or chaffs of the calyx boat-shaped entire, with a four-valved corolla; the outer valves lanceolate, smooth, the inner villous.

DESCRIPTION.

ROOT annual. *Stalks* a foot or eighteen inches in height, upright, round, streaked, swelling a little at the joints, and at the lower ones often branching. *Leaves* al-

most half an inch in breadth, of a lively green, with something of a glaucous hue; they are upright, sharp-pointed, roughish about the edge, and have at the base a very thin pellucid membrane, called by some authors *ligula*: the lower part of the upper leaf swells out like a spathe, completely involving and protecting the head of flowers whilst young. This is single, large, an inch or more in length, and has a small linear sheathless leaf at the base of it. The calycine valves are large, and have two green ribs on each side. The parts of fructification are sufficiently described in the specific character.

OBSERVATIONS.

This grass is a native of the Canary Islands, but is now found in a wild state in Britain, Flanders, Hesse, Silesia, France, Italy, and Spain. It is not mentioned as an indigenous plant with us, by any of our old authors; not even in the third edition of Ray's Synopsis (1724): nor have we ever found it except about dunghills, or by road sides, in places where it might have been thrown out among rubbish, or casually dropped by birds. It flowers from June to August.

We believe that the cultivation of this grass is confined to a part of the county of Kent. Mr. Sherard and Mr. Rand observed several fields sown with it near Sandwich*. Mr. Miller informs us, that it is cultivated particularly in the isle of Thanet, where it is esteemed a profitable crop.

It is reputed a slow grower, and therefore liable to be overrun with weeds. The seed is sown at the end of February, or the beginning of March, in drills, twenty to the rod, and six gallons to an acre. Mr. Miller is of opinion, that half this quantity is sufficient. It is usual to manure for this crop, with 50 or 60 cart-loads of dung to the acre †.

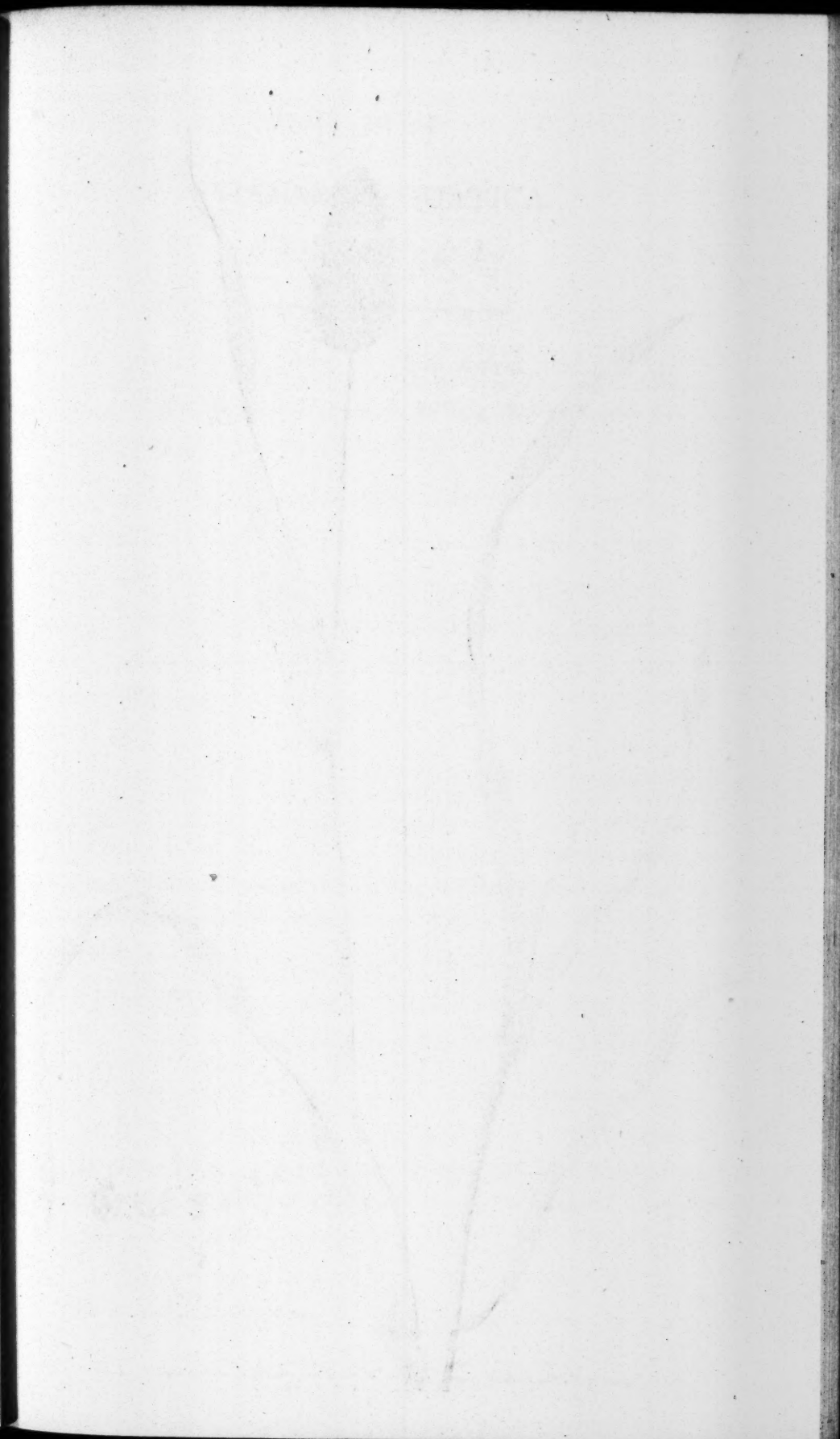
* Ray's Synopsis, 394. † Young's Annals, vol. 4, p. 222.

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Drawn, Engraved & Published, April 1798

by F. T. Nodden M^{rs} Brown's Street, Golden Square.

PHALARIS AQUATICA.

*Water Canary-grass.**Lin. spec.* 79. *Ait. hort. kew.* 86. *Amæn. Acad.* 4. 264.Figured in *Barrel. ic. t.* 700. *f.* 1. *Buxb. cent.* 4, *t.* 53.

SPECIFIC CHARACTER.

Panicle awnless cylindric, in shape of a spike, glumes of the calyx boat-shaped, somewhat finely toothed, with a three-valved corolla: the inner valves villous, the outer one minute and awl-shaped.

DESCRIPTION.

ROOT annual. Culm or stalk reedy. From the swelling sheath of the upper leaf issues one smooth spike, or rather panicle of an oblong-ovate shape. The glumes or chaffs are lanceolate, smooth, keeled, and marked with a nerve on each side.

OBSERVATIONS.

It is a native of Egypt, and was introduced (according to the Kew catalogue) by M. Thouin, in 1778. It flowers in June and July. The figures of Barrelier and Buxbaum correspond so ill with our plant, that it may be doubted whether it is the same with theirs.

This species, as far as we know, has not been cultivated for economical purposes.







MEDICAGO.

DIADELPHIA Decandria.

GENERIC CHARACTER

Legume compressed, twisted spirally like a screw.

Keel of the corolla bending down from the standard.

SPECIES.

Medicago lupulina. *Black* or *Hop Medick.* *Blackseed* or *Noneuch.*

Lin. spec. 1097. *Huds. angl.* 330. *With. bot. arr.* 807.
Curtis lond. 2. 57. *Pollich. pal. n.* 714. *Krock. files. n.* 1223. *Hall. helv. n.* 380. (*Medica*)
Mus. rust. IV. t. 1. *f.* 4.

Medica lupulina. *Scop. carn. n.* 940.

Trifolium pratense luteum. *Fuchs. hist.* 819. *capitulum brevius.* *Bauh. pin.* 328.

Tr. luteum lupulinum. *Ger. emac.* 1186. 5.

Tr. montanum lupul. *Park. theat.* 1105. 6.

Melilotus minima: *Rivin. tetr. t.* 8. *Mor. hist. f.* 2.
t. 16. *f.* 8. & *t.* 15. *row. 4. fig. f.*

SPECIFIC CHARACTER.

Spikes of flowers oval; *legumes* kidney-shaped, containing one seed; stalks trailing.

DESCRIPTION.

STALKS, unless supported, procumbent, with very numerous alternate branches. *Stipules* oval-lanceolate, with a long awn. *Leaves* on very short footstalks; leaflets oblong wedge-shaped and blunt, ferrate upwards, emarginate, with the midrib lengthened into a point. Flowers yellow, small; calyx slightly downy, nearly as long as the corolla, with five awl-shaped teeth, nearly equal, but the two upper ones rather shortest. The seed-vessels turn black when the seeds are ripe*. They are wrinkled, and somewhat rough with stiff hairs†.

The root penetrates deep into the earth, and is biennial. Stalks somewhat angular, and slightly hairy‡. Flowers from 30 to 40 and upwards in a spike§.

OBSERVATIONS.

This Medick, having ternate leaves, is usually considered as a Trefoil, from which, however, it differs essentially in the fructification. It may be distinguished from *Trifolium agrarium* and *procumbens*, which it most resembles, by the compact oblong shape of the spike, the smallness of the flowers, and the blackness of the seed-vessels. In a wild state it is generally more hairy than these§.

It is cultivated in the Eastern counties, and several other parts of the kingdom, under the names of *Trefoil*, *Black-feed*, and *Nonefuch*, both separately, and with Ray-grass, for mowing or sheep-feed. Although inferior, as Linneus observes, to some of this genus, yet it is esteemed very sweet food, particularly for sheep.

It is found frequently wild on dry banks and hilly pastures, flowering in June and July.

* Woodward MSS. + Linneus. ‡ Curtis lond. || Withering.

§ Curtis lond.



Drawn, Engraved & Published in May 1799 by F. P. Nodder, No. 27, Strand, London.

CYNOSURUS.

TRIANDRIA Digynia.

GENERIC CHARACTER.

Calyx two-valved, many-flowered. *Proper receptacle* leafy, fixed to one side.

SPECIES.

Cynosurus cæruleus. *Blue Dog's-tail Grass.*

Lin. spec. 106. *syft.* 117. *fl. succ. n.* 89. *Huds. angl.* 59.

Gouan illustr. 4. *Jacqu. miscell.* 2. 66.

Sesleria coerulea. *Scop. carn. n.* 90. *Hall. helv. n.*

1446. *With. bot. arr.* 84. *Arduini animadv. spec.*

2. 18. *t.* 6. *f.* 3, 4, 5.

Gramen glumis variis. *Bauh. pin.* 10. *prod.* 21. *f.* 1.

theat. 158. *Scheuch.* 83. *t.* 2. *f.* 9. *A. B. Park.*

theat. 1152. *f.* 6.

Gr. parvum montanum spica crassiore purpureo-cærulea brevi. *Raii syn.* 399.

SPECIFIC CHARACTER.

Bractes entire.—*Spike* subcylindric.

DESCRIPTION.

ROOT perennial. *Stalks* slender, upright, from 2 to 6 inches and a span in height, surrounded at the base with a

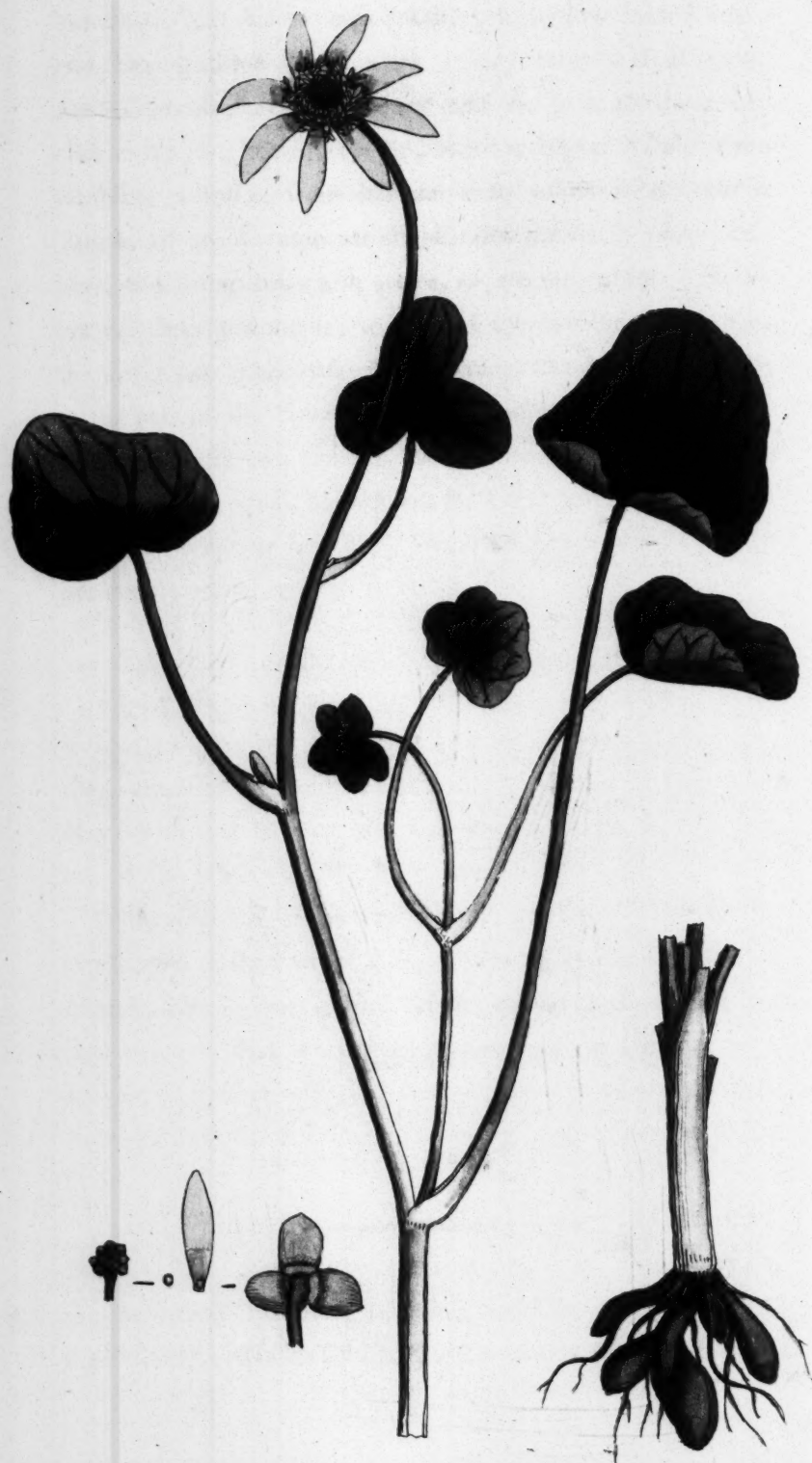
bundle of root leaves inclosed in a brown wrinkled skin; and having three joints, with a very short leaf at each. *Leaves* bluish sea-green, from half an inch to three inches in length, keeled, rough along the edges. *Panicle* resembling a spike, from half an inch to near an inch in length, of an oblong ovate shape, and a reddish purple colour, sometimes brownish white, or entirely white. Flowers on short peduncles; leaflets of the involucre roundish, the lower one at the base of the spicule, the other higher up, at the base of the flowers on the opposite side; calyx containing usually two flowers, but sometimes 1 or 3; valves of the corolla equal, bearded on the edges and keel; anthers yellow, except at one end, where they are purple; they are deeply cloven at both ends.

OBSERVATIONS.

This grass is a native of many parts of Europe. With us it is found only in the mountainous pastures of the northern counties. The first notice of it we have is from Mr. Ray, who had it from Mr. Petiver, to whom it was sent out of the north, by Mr. Fitz-Roberts.

It flowers the earliest of all our grasses. This Spring (1792) the spikes were pushing vigorously on the 16th of March, and it was in full flower on the 29th. This is a circumstance that would recommend it for culture, if it answered in other respects; but with us it is of low growth. Foreign authors describe it as being larger than we find it to be.

It differs from the proper species of the genus *Cynofurus*. Scopoli says, that it has the appearance of *Anthoxanthum*, the manner of flowering of *Aira*, and that it approaches to the *Phleums*. Haller thinks it might remain with the *Poas*.



RANUNCULUS.

POLYANDRIA Polygynia.

GENERIC CHARACTER.

Calyx five-leaved [in this species 3, 4 or 5] *Petals* five [in this eight]; with a melliferous pore on the inside of the claws. *Seeds* naked.

SPECIES.

Ranunculus Ficaria. *Pilewort*, or *Lesser Celandine*.

Lin. spec. 774. *fl. suec. n.* 496. *Curtis fl. lond.* 2. 39.

Fl. dan. t. 499. *Scop. carn. n.* 684. *Pollich pal. n.*

529.

Ficaria Hall. belv. n. 1160. *Blackw. t.* 51. *verna.*

Huds. angl. 244. *With. bot. arr.* 579.

Chelidonia rotundifolia minor. *Baub. pin.* 309.

Chelidonium minus. *Fuchf. hist.* 867. *Ger.* 669. *emac.*

816. *Park. theat.* 617, 3. *Petiv. brit. t.* 38. *f.* 1.

Raii hist. 579. *syn.* 246.

SPECIFIC CHARACTER.

Leaves heart-shaped, angular, placed on footstalks; one flower only on each peduncle.

DESCRIPTION.

THIS common plant is easily distinguished by its roots, formed of many knots or bulbs, shaped like the fig, whence

its name *Ficaria*: by its shining roundish heart-shaped leaves on very long footstalks, more or less notched or scalloped about the edge; by the smoothness of the whole plant; by the calyx of three [sometimes 4 or 5] concave, deciduous leaves, with a small reflex scale under each; by the numerous, yellow, shining, petals, usually eight in number, each having a small scale at the base; and by the very early season at which it flowers. The leaves vary much in form; some are cut very deeply, and others are quite entire; the petals also vary in form, and in number from 7 to 12.

OBSERVATIONS.

Although the Pilewort differs from the Crowfoots in the number of petals, and of leaves in the calyx, yet since it agrees with them in the same general nature and habit, as well as in the nectary or little scale at the base of the petals, it seems to be of the same natural genus.

We observed it flowering this Spring, in its wild state on the 20th of February. It continues to flower through March, and a great part of April. In meadows, pastures, orchards, and by the sides of ditches, it is abundant, especially where it can find either shade or moisture.

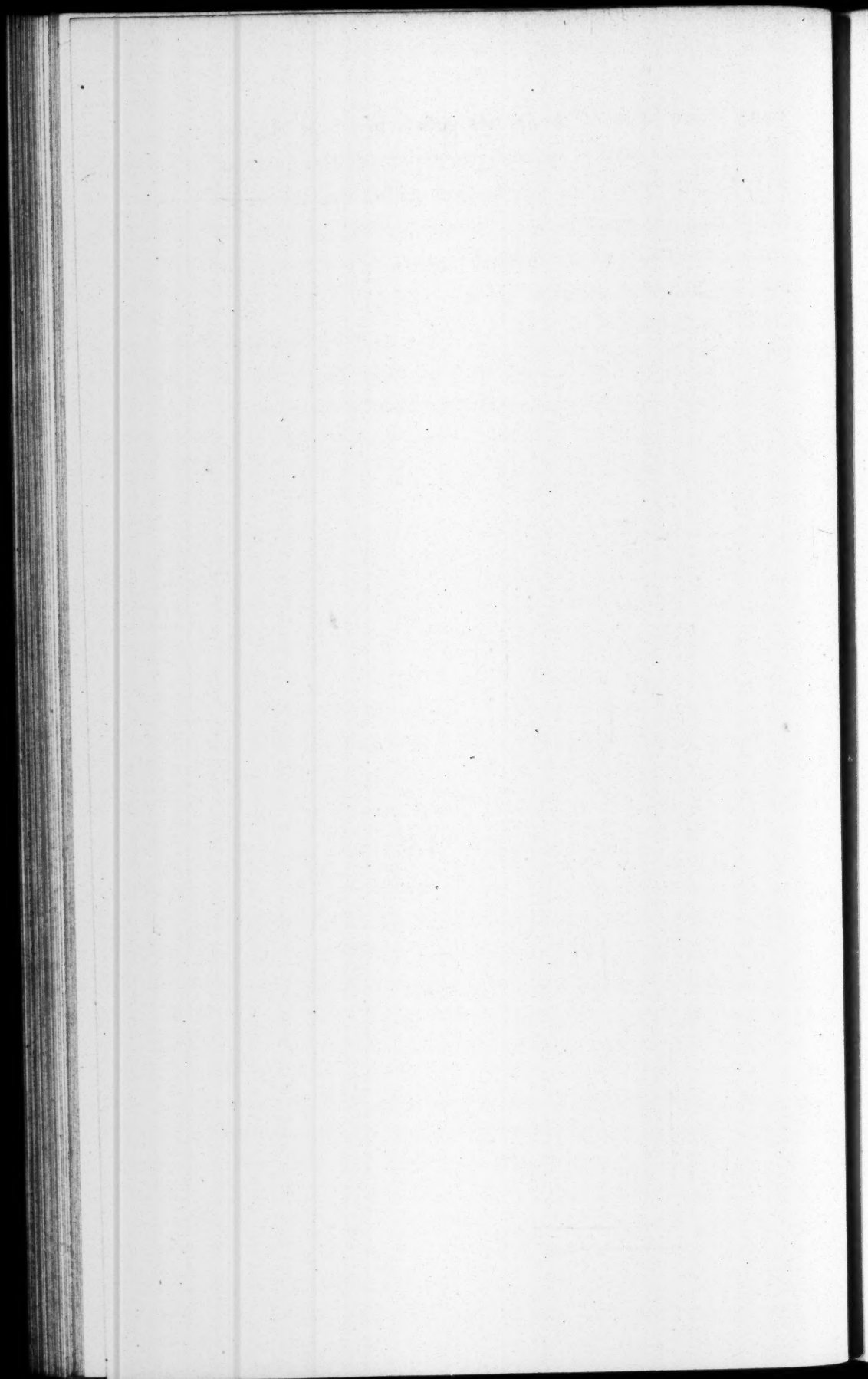
Ray has observed, that when the plant begins to decay, which is in the month of May, it puts forth small bulbs, like grains of wheat, from the bosoms of the leaves. Thus the plant readily propagates itself abundantly, and this provision is the more necessary, because the seeds usually prove abortive.

Pilewort closes the petals from about five in the evening to nine in the morning; and in wet weather.

According to Linneus, the young leaves may be eaten in the Spring with other potherbs. Though milder than most of the genus, this, however, retains something of that acrid-

mony which many of the species possess in a high degree. The form of the roots probably recommended this plant as a cure for the piles; and this fancied quality was the origin of the English name.

Linneus remarks, that it choaks other plants which grow near it. Pilewort certainly occupies much room in some meadows, and not being eaten by cattle, should be extirpated. Nothing discourages its increase more than coal or wood ashes, which are both excellent dresses for meadows.





Drawn, Engraved & Published, June 1790, by F. P. Nodder N. 15 Brewer Street, Golden Square.

ALOPECURUS AGRESTIS.

Field Fox-tail Grass, or Mouse-tail Grass.

Lin. spec. 89. *Huds. angl.* 27. *With. arr.* 59. *Curtis lond.* 2. 7. *Schreber t.* 19. *f.* 2. *Fl. dan. t.* 697. *Mor. hist. f.* 8. *t.* 4. *f.* 12. *Ger. herb.* 9. 4. *emac.* 11. 2. *Park. theat.* 1169. 8. *Baub. hist.* 2. 473. 1.—Spike, &c. *Leers herborn. t.* 2, *f.* 5. *Monti* 51. *Scheuch. t.* 2. *f.* 6. A. B.—Described in *Hall. belv. n.* 1540. *Pollich pal. n.* 65. *Leers n.* 44. *Krock. files. n.* 105. *Scheuch.* 69. *Curtis lond.* &c

SPECIFIC CHARACTER.

Culm spiked upright; glumes smooth.

DESCRIPTION.

THIS Grass is readily distinguished from the Meadow Fox-tail grass, to which it bears most resemblance, by the great length and slenderness of its spikes, tapering to a point, and usually of a purple colour.

It is marked as perennial by Linneus, Hudson, and in the Kew catalogue; by Leers, Curtis, and others, as annual. The flowering stalk is a foot or 18 inches high, upright, except that it is crooked at bottom; it has 3 or 4 joints, which are smooth, and purple. The leaves are about 3 inches long, and from a sixth to a quarter of an inch broad, roughish on the upper surface only, with a blunt

membrane (ligula) at the base. The sheath investing the young spike has the keel or principal nerve rough. The flowers are loosely imbricate, on very short peduncles. The valves of the calyx have no awn; the single valve of the corolla has an awn proceeding from the base, nearly twice the length of the spicule. Filaments twice the length of the calyx, with anthers, forked at each end. Seed very small, wrapped up in the corolla and calyx. The calyx is surrounded at bottom by a ring*.

OBSERVATIONS.

This grass is a weed in cultivated ground; it is also frequent by way-sides, on banks and the borders of fields, but rarely in pastures.

It varies in the size both of the plant and spike, as well as in the colour of the latter, which is sometimes of a pale green or whitish, without any purple. When in full flower it bends a little. It has acquired the name of Mouse-tail grass in English, and *mysuroides* in Latin, from the great length and slenderness of the spike, resembling the tail of a mouse.

Its inferiority in every respect to Fox-tail grass is so manifest, that it would answer no purpose to make experiments with any hopes of bringing it into cultivation.

It flowers early, continues flowering till Autumn, and comes into bloom remarkably quick after being sown†. This year (1792) it was in full bloom on the 28th of April, long before *Anthoxanthum odoratum*.

* Curtis lond.—From whom and Leers, compared with the plant itself, the above description is chiefly taken.

† Curtis lond.

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Drawn, Engraved & Published, June 1792, by F. P. Widdow, N^o 45 Brewer Street, Golden Square.

ANTHOXANTHUM.

DIANDRIA Digynia.

GENERIC CHARACTER.

Calyx a two-valved glume or chaff, containing one flower. *Corolla* a two-valved, pointed glume.
Seed one.

SPECIES.

Anthoxanthum odoratum. *Sweet-scented Vernal Grass.*

Lin. spec. 40. *Huds. angl.* 11. *With. arr.* 25. *Curtis lond.* 1. 4. *præf. obs. t.* 1. *Stilling. misc. t.* 1. *Mus. rust.* 4. 2. 3. *Mill. illustr. Schreber t.* 5. *Fl. dan. t.* 666. *Baub. hist.* 2. 466. 1. *Mor. hist. f.* 8. *t.* 7. *f.* 25. *Spike, &c. Leers* 2. 1. *With.* 2. 1. *Monti* 57. *ic.* 84.—Described by *Haller, n.* 1491. *Scop. carn. n.* 38. *Pollich. pal. n.* 29. *Leers herborn. n.* 25. *Krock. files. n.* 47. *Scheuchzer* 88. *Curtis, Withering, &c.*

SPECIFIC CHARACTER.

Spike oblong, ovate; *floscules* longer than the awn, on short peduncles.

DESCRIPTION.

THIS may be easily distinguished from all other grasses, by the circumstance of each flower having two stamens only; by one valve of the calyx being small, the other large and including the whole fructification; the valves of the corolla

very hairy, each having an awn, that from the outer valve straight, shorter than the calyx, from the middle of the back, or near the top ; that on the inner valve springing from the base or near it, at first straight, and a little longer than the calyx ; but as the seed ripens, the top generally bent horizontally* inward ; the nectary composed of two little ovate shining valves, of different sizes, closely embracing the germ, and scarcely to be discovered, unless when the anthers are protruding from between them ; for as soon as they are excluded, they close again on the germ, and form a coat to the seed.

The root is perennial ; the stalks are from eight inches to a foot and upwards in height, having two or three joints on each. Root-leaves downy on their upper surface. Stem-leaves a little rough on both sides, with a blunt membrane at the base finely notched ; the sheath streaked and smooth ; the lower one somewhat villous, and often reddish*.

OBSERVATIONS.

The usual colour of the spike is a pale yellow, whence its generic name *Anthoxanthum*. From the sweetness both of the flowers and leaves, which it imparts to new-mown hay, it has derived its specific or trivial name *odoratum*, or *sweet-scented*. From the earliness of its flowering, the beginning or middle of May, it has acquired its other English name of *Vernal* or *Spring-grass*.

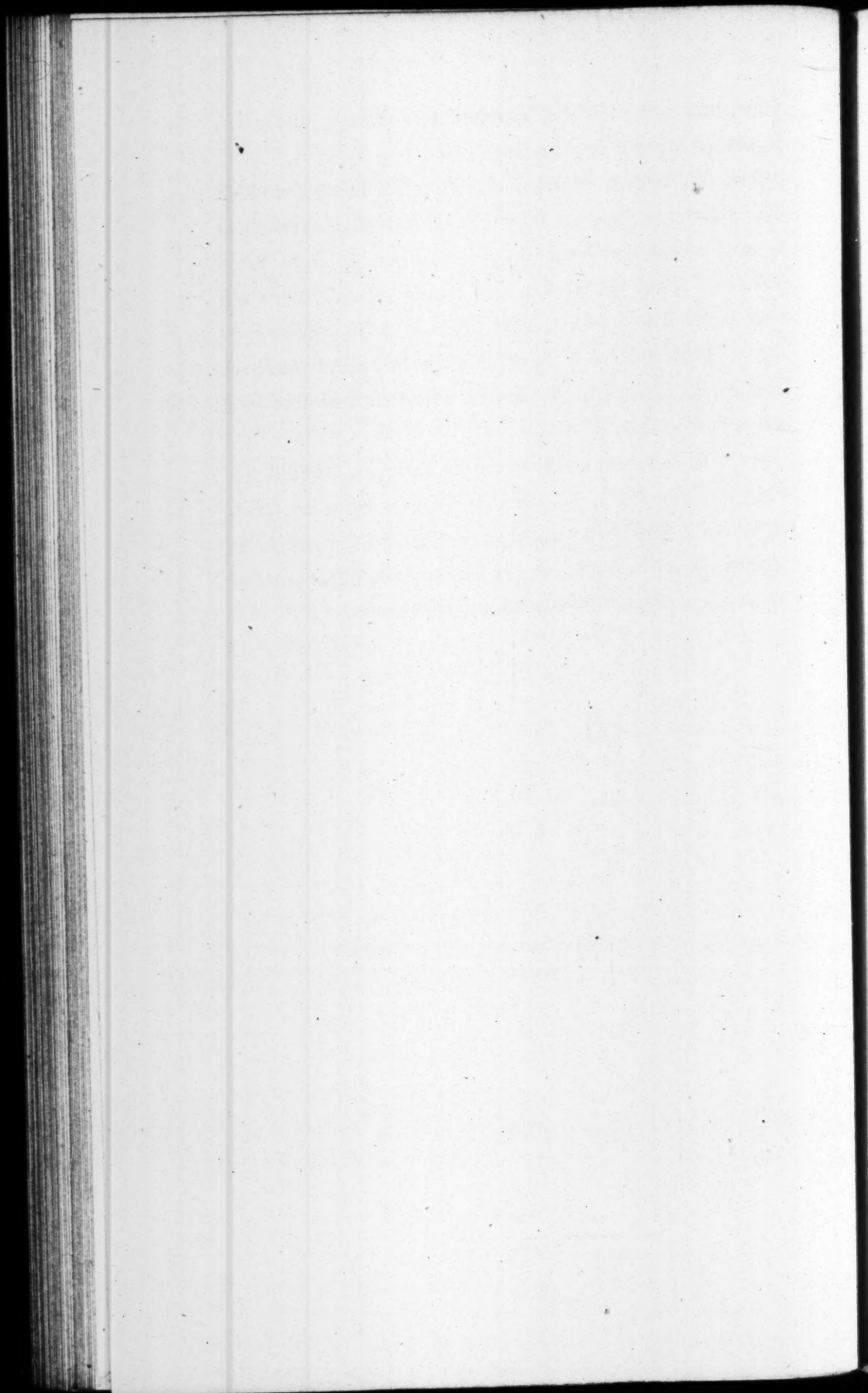
It grows on almost any kind of soil, but seems to prefer that which is moderately dry. In a rich soil the leaves have a great tendency to curl. It is common in meadows and pastures ; and also in woods, where the spikes are usually slender and loose. The seed is ripe about the middle of

* Curtis and Leers.

June, and may easily be separated by rubbing; this grass, however, is not very abundant in seed.

Mr. Stillingfleet remarks, that from its being found on such pastures as sheep are fond of, and from whence excellent mutton comes, it is most likely to be a good grass for sheep pastures. That he has found it on all grounds, from the most sandy and dry to the most stiff and moist, and even in bogs. That it is very plentiful in the best meadows about London, as about Hampstead and Hendon; and that it is very easy to gather.

Mr. Curtis recommends it for its earliness, its readiness to grow in any soil or situation, and for its agreeable scent. He thinks it may be cultivated to considerable advantage, as it forms a thick tuft of leaves at bottom, though in point of crop it is not so productive as some other Grasses.





C. aca. Engelm. & Schaffner, *Jung.* 1799. By F. L. Vocker, 1850. Brauer, Sweet, Golden Square.

VALERIANA.

TRIANDRIA Monogynia.

GENERIC CHARACTER.

Calyx none. *Corolla* above the germ, monopetalous, swelling at the base on one side. *Seed* one.

SPECIES.

Valeriana Locusta. Corn-salad, or Lamb's Lettuce.

Lin. spec. 47. *fl. suec. n.* 36. *Huds. angl.* 13. *With. arr.* 37. *Curt. lond.* 5. 4. *Fl. dan. t.* 738. *Riv. mon. t.* 6. *f.* 2. *Mor. hist. f.* 7. *t.* 16. *f.* 36, 37. *Ger. herb.* 242. *emac.* 310. *f.* 1, 2. *Park. theat.* 812. 3. *Baub. hist.* 3. 323. *f.* 2. & 324.—Described by *Haller n.* 214. *Pollich. pal. n.* 32, 33. *Krock. files. n.* 51. *Relhan. cant. n.* 26. *Curt. &c.*

SPECIFIC CHARACTER.

Flowers with three stamens; *stalks* dichotomous; *leaves* linear.

DESCRIPTION.

ROOT annual. Stalk from four inches to a span and even a foot more in height. Bottom leaves many, entire or very slightly toothed; those on the stalk are in pairs at each subdivision, sessile or embracing the stalk in part, they are usually more toothed than the lower leaves, and both these and the

stalk are fringed at the edges with fine white hairs. The flowers are collected into a close little umbel or corymb, protected by an involucre. The corolla is minute, and of a very pale blue colour.

OBSERVATIONS.

No natural genus is subject to more variations, or more effectually mocks the efforts of artificial arrangement, than the Valerian. This species also admits very considerable varieties in the form and indentures of the leaves, in the fruit, &c.—It is distinguished from the Valerian properly so called, by having the seeds naked or without any down or feather (pappus).

Early in the Spring, and even during the greatest part of a mild Winter, this little plant will furnish a good material for salads. It is common in corn fields, and appears about the time when lambs are dropped. From these circumstances it has obtained the common English names. Without being at the trouble of cultivating it, the peasant may find it abundantly in the month of April on the warm banks of fields, pastures, and lanes. Towards the end of this month, or early in May, it begins to flower. In corn fields it is usually very small and low.

Gerard, who says it may be called from the Dutch *White Pot-herb*, informs us, that since it hath grown in use among the French and Dutch strangers in England, it hath been sown in gardens as a salad herb.

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LAMIUM.

DIDYNAMIA *Gymnospermia*.

Nat. Order of *Verticillatae*.

GENERIC CHARACTER.

Corolla having the upper lip vaulted or arched; the lower lip two-lobed; and the throat toothed on each side.

SPECIES.

Lamium purpureum. *Red Dead-Nettle* or *Archangel*.
Lin. spec. 809. *Huds. angl.* 255. *With. arr.* 605. *Figured by Curtis lond.* 1. t. 42. *Fl. dan.* t. 523.
Berg. phyt. 119. *Riv. mon.* t. 62. f. 2. *Ger. herb.* 568. 4. *emac.* 703. 3. *Park. theat.* 605. 1. & 587. 11. *Mor. hist. f.* 11. t. 11. f. 9. Described by *Haller, helv. n.* 272. *Scop. carn. n.* 701. *Pollich. pal. n.* 556. *Krock. files. n.* 929. *Raii hist.* 559. *Curtis, &c.*

SPECIFIC CHARACTER.

Leaves heart-shaped, blunt, petioled or on footstalks.

DESCRIPTION.

ROOT annual. Stalks weak, bending, branched towards the bottom, naked for a considerable space near the

top, six inches high, and upwards. Leaves veiny, downy with hairs, but not rough, the lowermost smaller, and on longer petioles, the uppermost growing thick together; both these and the stalks are frequently tinged with red. Flowers close together, and many in a whorl, chiefly between the upper leaves. Corolla purple, with the under lip usually spotted: there are two teeth on each side of the throat or entrance into the tube, the upper ones long and pointed; the lower blunt, with a spot on them.

VARIETIES.

The corolla varies in colour, from a full bright red, to a very pale purple, and even white. The colour is usually red in a dry soil and open exposure; and pale when the plant grows in the shade.

The leaves vary much in size, but particularly in the indentures about the edge. Ray and others have remarked them to be sometimes so deeply cut, as to be in a manner lobed. On the contrary, I have a specimen in which the leaves have no indentures whatsoever about their edges.

OBSERVATIONS.

It is a common weed in kitchen gardens and corn-fields, under hedges, &c. flowering very early, and a great part of the year.

As a medical plant it is disused; nor is it ever, as we believe, eaten among us as a pot-herb, whatever they may do in Upland, a province of Sweden.

It would be impertinent to mention the squareness of the stalks, the regular opposition of the leaves, the manner of the flowers growing in whorls, and the four naked seeds at the bottom of the calyx, which serves them for a capsule: for these circumstances form no part of the specific character, being common not only to all the *Lamiums*, but to *Verticillate* plants in general.



SPECIES.

Lamium album. *White Dead-Nettle* or *Archangel*.

Lin. spec. 809. *Huds. angl.* 255. *With. arr.* 604. Figured by *Curtis, lond.* 2. 45. *Fl. dan. t.* 594. *Berg. phyt.* 161. *Riv. mon. t.* 62. *f.* 1. *Ger. herb.* 566. *emac.* 702. 1. *Park. theat.* 605. 3.— Described by *Hall. helv. n.* 271. *Scop. carn. n.* 271. *Pollich. pal. n.* 555. *Krock. files. n.* 928. *Raii hist.* 559. *Curtis, &c.*

SPECIFIC CHARACTER.

Leaves heart-shaped, acuminate, ferrate, petioled.
Flowers about 20 in a whorl.

DESCRIPTION.

ROOT perennial, creeping. Stalks upright, unbranched, slightly hairy, sometimes almost smooth, and in exposed situations reddish purple, about a foot in height. Leaves resembling those of the great stinging nettle, hairy on both sides; the lower on longer petioles than the upper ones, and not so much pointed: those next the root frequently small, and almost round. Flowers from 10 to 20 in a whorl, much larger than in the foregoing sort, yellowish white, sometimes slightly tinged with red; upper lip hairy; two small teeth on each side of the throat; calyx sessile, ribbed, with a dark purple spot at the base, and a short linear bracte. Anthers

hairy, dark purple. Ray observes, that with their dark edges they represent in some degree the form of the fig. 8.

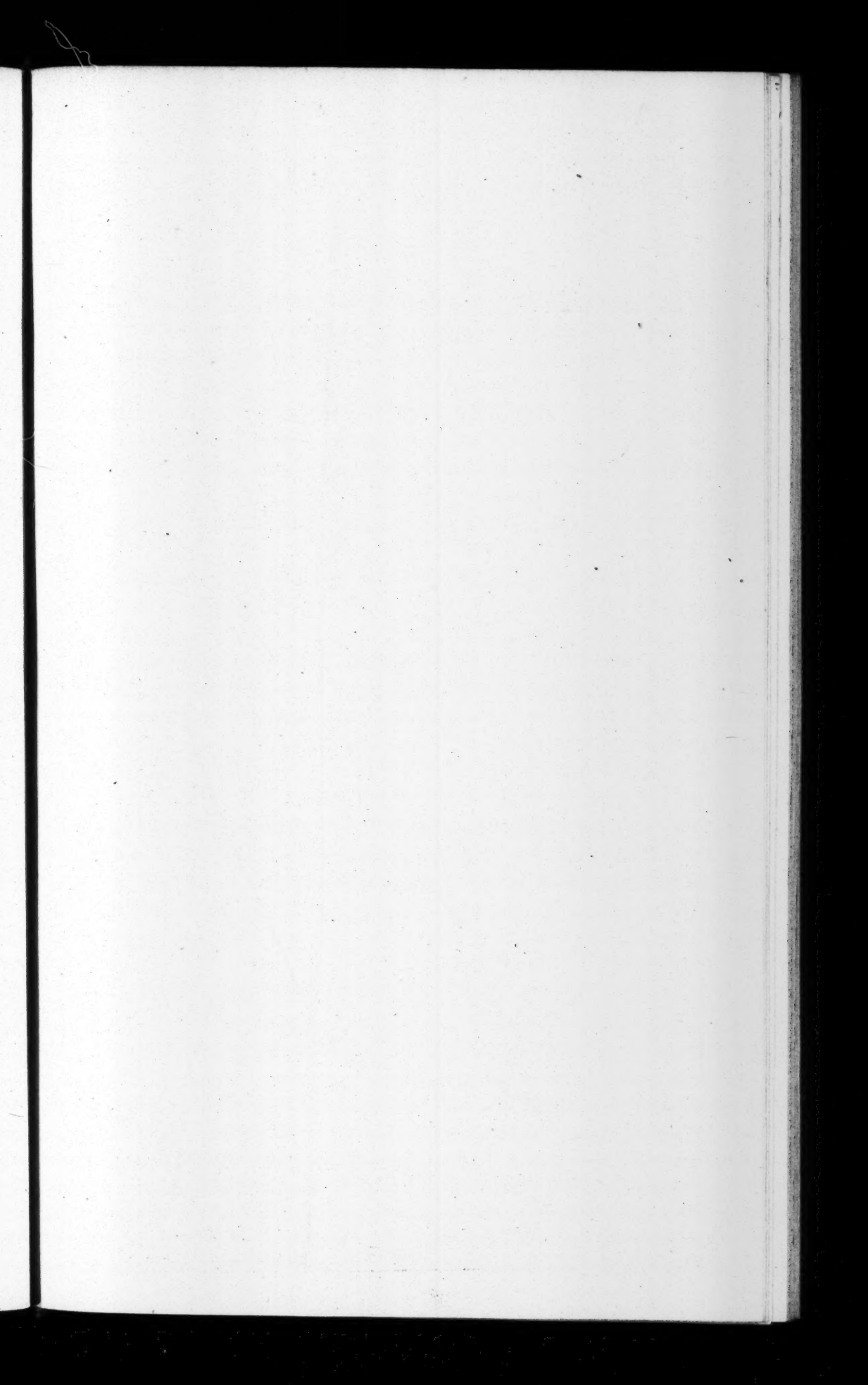
OBSERVATIONS.

This is found wild in hedges, among bushes and rubbish ; and in corn-fields very common. It flowers in April, May, and June.

It is little used as a medical herb ; but it is much resorted to by bees. The honey, as Mr. Curtis remarks, being secreted abundantly into the bottom of the tube of the flower, by a little gland surrounding the base of the germ. This, as well as the other sort, has a disagreeable smell when bruised.

Having a strong, creeping, perennial root, and being disliked by cattle, it should be extirpated by the farmer*.

* Curtis lond.





St. caen. Cyn. nivalis de subditis July 1798. by F. R. Walter. 125. Brewer, Great Britain, 1798.

NARDUS.

TRIANDRIA Monogynia.

GENERIC CHARACTER.

Calyx none. *Corolla* two-valved.

SPECIES.

Nardus stricta. Mat-grass, or small Matweed.

Lin. spec. 77. *Huds. angl.* 22. *With. arr.* 54. Figured by *Schreber*, 65. t. 7. *Baub. theat.* 70. *Baub. hist.* 2. 513. 2. *Mor. hist. f.* 8. t. 7. f. 8. *Lob. ic.* 90. 1. *Ger. emac.* 1631. 3. *Park. theat.* 1199. 5, 6, 7. Spike, &c. *Leers herborn. t.* 1. f. 7.—*With. t.* 2. f. 6. *Scheuch. t.* 2. f. 10. *Monti* 31.—Described by *Haller, helv. n.* 1410. *Scop. carn. n.* 67. *Pollich. pal. n.* 53. *Leers n.* 38. *Krock. files. n.* 83. *Raii hist.* 1260. 8. *syn.* 393. 2.

SPECIFIC CHARACTER.

Spike setaceous or bristle-shaped, straight, all the florets pointing one way (*secunda*)

DESCRIPTION.

ROOT perennial. Culms from a span to a foot in height, slender, stiff, roughish, having one, two, or three

joints near the base, with a short leaf to each, and thence naked to the spike. Root-leaves numerous, longer, narrow, a little rough. Spike two or three inches long, consisting of about 20 spicules dispersed thinly along it. Florets yellowish white, or purple, pubescent, alternate, sessile. Spike-stalk (rachis) convex on one side, hollowed on the other, with rough alternate teeth on the edges for the insertion of the florets, and continued above them to a short bristly point.

OBSERVATIONS.

This grass is easily distinguished by the flowers having one style only; so that although it be in the same class with most of the grasses, it is in a different order, and ranges rather with the *Calamariæ*, such as the *Schoenus* or Rush-grass, the *Scirpus* or Club-grass, &c.—By the slenderness and rushy stiffness of the stalks and leaves; and by the florets being thinly dispersed along the spike, mostly in pairs, and pointing in one direction.

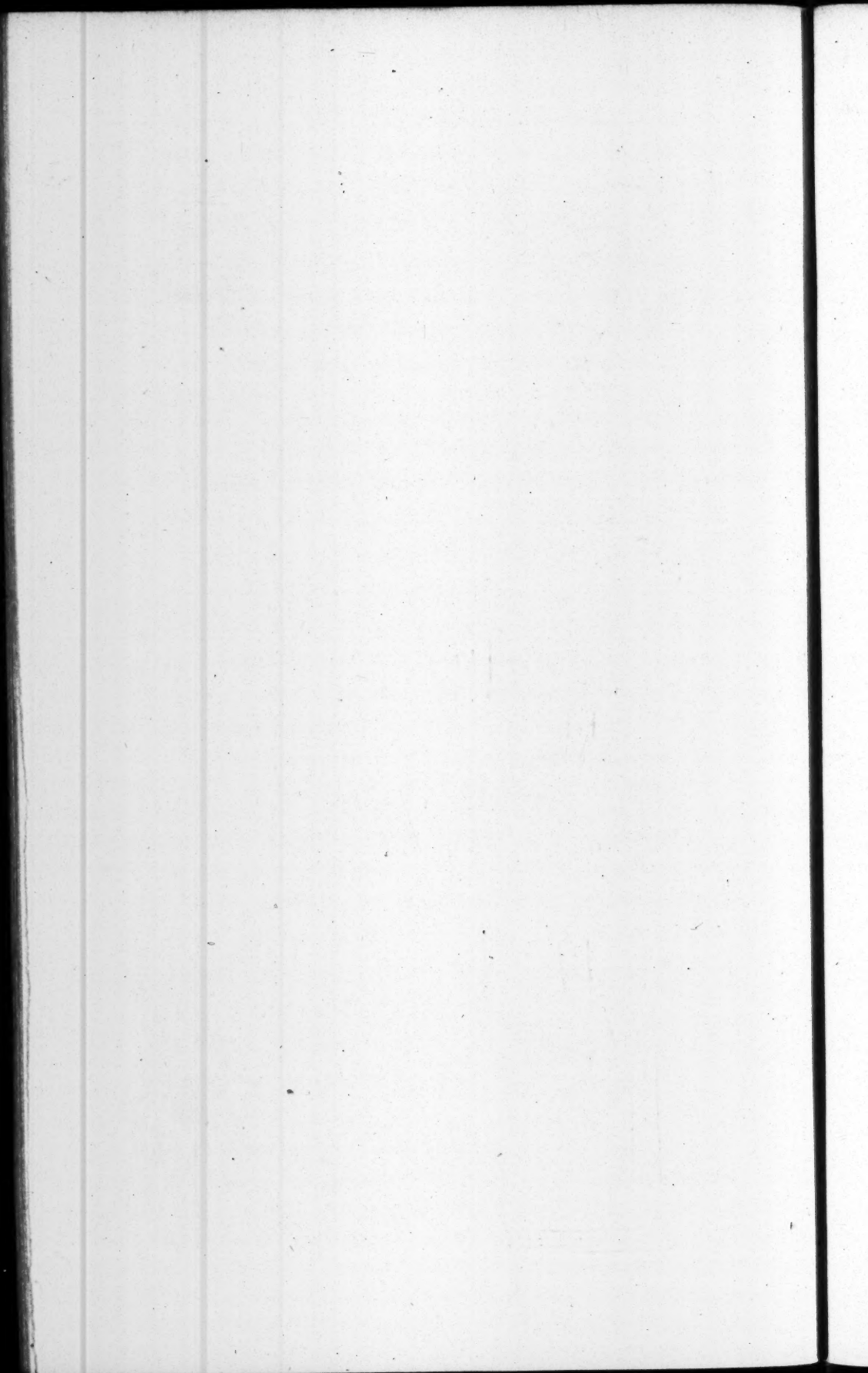
It flowers from May or June to August; Ray says from the end of April, and that it holds its spike till Winter.

In woody, moist, barren meadows; with us chiefly on or about bogs on heaths.

This grass being stiff, hard, and short, Linneus observes that it eludes the stroke of the scythe, or takes off its edge, for which reason it is disliked by the mowers. In England it rarely comes under the scythe.

Linneus also informs us that crows frequently stock it up, for the sake of the larvæ of some *Tipula*, which they find at the root.

He says that goats and horses eat it; but that cows and sheep are not fond of it. With us we do not know that it is put to any use whatever.





RANUNCULUS.

POLYANDRIA Polygynia.

GENERIC CHARACTER.

Calyx five-leaved. *Petals* five, with a honied pore at the claw of each within. *Seeds* naked.

SPECIES.

Ranunculus bulbosus. *Bulbous Crowfoot.*

Lin. spec. 778. *Huds. angl.* 241. *With. arr.* 574. *Lightf. scot.* 292—Figured by *Curtis, lond.* 1. 38—*Mill. illustr. Fl. dan. t.* 551. *Krock. files. 2. t.* 21. *Ger. herb.* 806. 6. *emac.* 953. 6. *Park. theat.* 329. 5. *Petiv. brit. t.* 38. f. 4.—Described by *Hall. helv. n.* 1174. *Scop. carn. n.* 692. *Pollich. pal. n.* 533. *Leers herb. n.* 425. *Krock. n.* 881. *Raii hist.* 581. 2. *Curtis, &c.*

SPECIFIC CHARACTER.

Calyxes turned back; *peduncles* grooved; *stalk* erect, bearing many flowers; *leaves* compound.

DESCRIPTION.

ROOT bulbous, like a small turnip; the new bulb formed above that of the last year. *Stalks* a foot high, round, hairy,

branched towards the top. The bottom leaves are on long hairy footstalks, very wide, and embracing the stalk at their base, branching into three parts at top, and spreading out into three leaflets, each usually subdivided into three lobes which are gashed and toothed; they are hairy on both sides, and pale underneath; the middle leaflet is on a much longer footstalk than the others. The leaves on the stalk are sessile or nearly so, deeply divided into numerous segments, much narrower than the others, divided and subdivided into threes: the uppermost multifid, linear, with very few teeth, and sometimes only digitate. Calyx hairy; stamens about 60; germs from 30 to 40.

Ray observes very justly, that this species differs from the creeping Crowfoot, not only in the root, but in having more upright stalks that never creep; the leaves towards the top of the stalks cut into longer narrower segments; the leaves of the calyx, after the flower opens, turned back to the peduncle; the heads of seeds a little more produced, and each seed not terminating in a spinule, as the creeping sort does: finally, it flowers a little earlier. We may add, that it is easily distinguished from the upright Crowfoot by its furrowed or grooved peduncles.

OBSERVATIONS.

The formation of the bulb is a clear proof, that the notion of Haller, Linneus, and some others, of the creeping Crowfoot being only an autumnal variety of this, is without foundation. No remains of creeping roots are to be found in the Spring, when the old and new bulbs are found together; and in a turf which was taken up, with five or six roots in it, they were all entirely distinct, and had each the old and new bulb together*.

It flowers in April and May, and abounds in dry pastures.

It inflames and blisters the skin, and beggars are said to use it for that purpose to excite compassion by artificial sores.

The juice is even more acrid than that of *Ranunculus sceleratus*. The roots are said to lose their acrimony on being kept, and to be even eatable when boiled. Hogs are certainly very fond of them.

* Woodward, MS.



Drawn, Engraved & Published Aug^t 1791 by F. R. Nodder N^o 15 Brumby Street Golden Square.

SPECIES.

Ranunculus repens. *Creeping Crowfoot.*

Lin. spec. 779. *Huds. angl.* 240. *With. arr.* 575. *Lightf. scot.* 292. Figured by *Curtis lond.* 4. 38. *Fl. dan. t.* 795. *Blackw. herb. t.* 31. *f.* 1. *Ger.* 804. 1. *emac.* 951. 1. *Petiv. brit. t.* 38. *f.* 7, 8. *Mor. hist. f.* 4. *t.* 28. *f.* 18. Described by *Haller, helv. n.* 1173. *Scop. carn. n.* 689. *Pollich. pal. n.* 534. *Krock. files. n.* 882. *Raii hist.* 581. 1. *Curtis, &c.*

SPECIFIC CHARACTER.

Calyxes spreading, *peduncles* grooved, *suckers* creeping, *leaves* compound.

DESCRIPTION.

ROOT perennial, consisting of numerous whitish fibres; these are thrown out at every joint of the stalk, as it creeps along the ground. The whole plant tinged with brownish purple, and hairy, particularly the membranes at the base of the petioles, which are semicylindric, rounded underneath, but flat and channelled above. The leaves are generally hairy on both sides, especially underneath; the upper surface is often clouded with white; the first and lower leaves are composed of three leaflets, each on a petiole, the middle one longest, cut deeply into three lobes, which are sharply notched: the rest are only three-lobed, except the uppermost next the flowers, which are only trifid, and sometimes even sim-

ple; these are linear. Flowering-stalks upright, angular, supporting two flowers, sometimes only one, on a deeply-furrowed peduncle. Calyx hairy, coloured yellowish and purple. Corolla very shining, of a deeper yellow than the upright Crowfoot. Stamens from thirty to forty or fifty. Germs about forty.

OBSERVATIONS.

This sort flourishes in almost any soil or situation, and therefore varies extremely in size and appearance. Though commonly covered with hairs, which on the stalks and upper surface of the leaves are pressed close, yet sometimes it is smooth.

Linneus observes that the flowers close during rain, but do not hang down.

It flowers in June, and continues flowering the rest of the Summer.

It has less of the acrid quality which is found in most of the genus, and is said to be eaten as a pot-herb. Cattle, however, do not feed on it willingly, and yet in many grass fields it makes a considerable part of the pasturage.



SPECIES.

Ranunculus acris. Upright Crowfoot.

Lin. spec. 779. *Huds. angl.* 241. *With. arr.* 576.
Lightf. scot. 293.—Figured by *Curtis, lond.* 1.
 39. *Blackw.* t. 31. f. 2. *Bauh. hist.* 3. 416. *Ger.*
 804. 2. *emac.* 951. 2. *Park. theat.* 328. 2. *Petiv.*
brit. t. 38. f. 3. *Mor. hist. f.* 4. t. 28. f. 16.—
 Described by *Haller, helv. n.* 1169. *Scop. carn.*
n. 690. *Pollich. pal. n.* 536. *Krock. files. n.* 884.
Raii hist. 583. 7. *Curtis, &c.*

SPECIFIC CHARACTER.

Calyxes spreading; *peduncles* round; *leaves* three-parted with many clefts; the upper ones linear.

DESCRIPTION.

ROOT perennial, consisting of numerous whitish fibres. Stalk two feet high, upright, round, somewhat hairy; the hairs pressed close. Root-leaves on long, upright, hairy petioles; the middle lobe trifid, the side ones two-lobed, all sharply toothed; slightly hirsute; the upper surface, particularly at the base, frequently of a purple colour. The leaves on the stalk are of the same structure, but divided into narrower segments, and placed on shorter petioles. The uppermost are sessile and linear. Calyx yellow and hairy. Flowers many, one or two together. Stamens from forty eight to ninety three. Germs up to fifty six or fifty nine.

OBSERVATIONS.

This species has the trivial name of *acris*, from its acrimony, in which it exceeds most of the kind. It loses this property when made into hay, but is then too hard to afford much nourishment. It is evident that cattle dislike it in a fresh state, for we see pastures that are fed very bare of grass, in a manner covered with it. If they chance to eat it, their mouths become sore and blistered. It flowers in June and July, in most meadows, especially moist ones.

These three Crowfoots are confounded by persons ignorant of Botany, under the names of Butter-flowers, Butter-cups, King-cups, Gold-cups, and Gold-knops; they are however easily distinguished, the first by its bulbous root, and its calyxes turned back; the second by its creeping stalk; the third by its tall, genteel, upright growth, and its round peduncles, without any grooves; the *repens* and *acris* have the calyxes spreading; the *bulbosus* and *repens* have the peduncles grooved. They flower in the order as they are placed. These common plants are called Butter-flowers and Butter-cups, from a notion totally unfounded, that their splendid yellow flowers, contribute to give butter the same colour. The fact is, that they abound in fertile pastures, and flower at a season, when grass is full of sap and highly nutritious.

The three species are all occasionally found wild with double flowers; in this state we frequently see the first and third cultivated in flower gardens, especially the third.

We should derive more satisfaction from informing the farmer how he might effectually root them out of his pastures, than how he might cultivate them successfully in his garden: for they propagate themselves with great facility, and occupy a considerable space in good meadows.



Drawn Engraved & Published Jan. 1890 by F. P. Nodding. No. 15 Brewer Street, Golden Square

ELYMUS.

TRIANDRIA Digynia.

GENERIC CHARACTER.

Calyx lateral, two-valved, aggregate, many-flowered.

SPECIES.

Elymus arenarius. *Sea Lyme-grass.*

Lin. spec. 122. *Huds. angl.* 56. *With. arr.* 124. *Lightf. scot.* 108. Figured by *Schreber.* 2. t. 40. and *Gmel. fib.* 1. t. 25. under the name of *Triticum*. Described in *Lin. spec.* *Schreb. Lightf.* and *Raii hist.* 1256. n. 5.

SPECIFIC CHARACTER.

Spike upright, compact. *Calyxes* tomentose, longer than the floret.

DESCRIPTION.

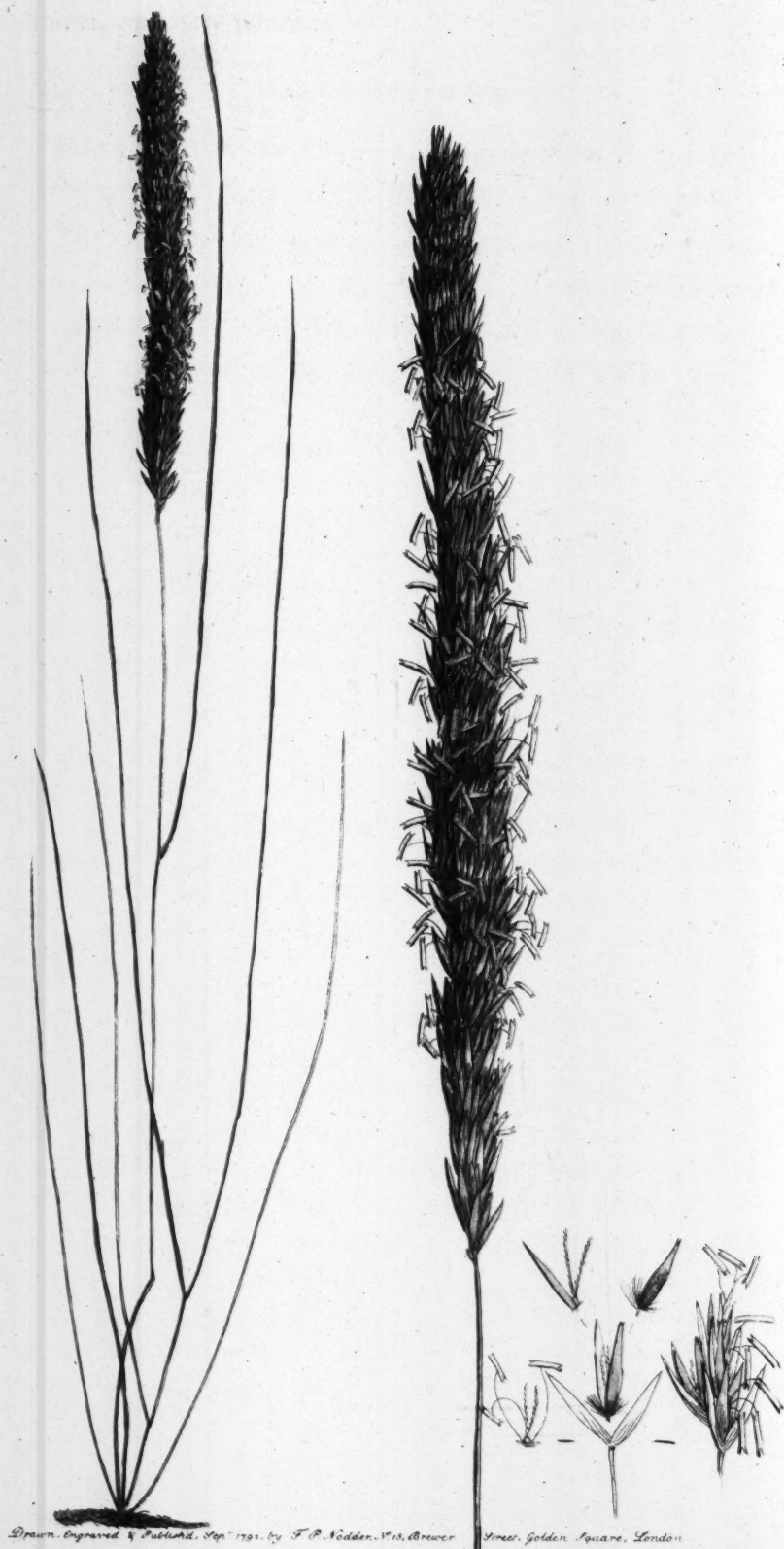
ROOT perennial. Leaves like those of the reed, bluish green, or whitish, channelled and stiff, rolled inwards and sharp pointed. Stalks two or three feet high, and upwards, strengthened by three or four joints, and terminated by a spike, eight or nine inches long, as large as a full-sized ear of wheat, but less compact: there are two spicules, or little

component spikes together; they are straight, contain two florets, and have no awns.

OBSERVATIONS.

It is a native of the sea coast, in many parts of Europe, growing in loose sand, and flowering from June to August.

The creeping roots of this grass prevent the sea sands from being blown away, and thus frequently prevent destructive inundations. Dr. Withering asks whether it might not be formed into ropes, as the *Stipa tenacissima* is in Spain.



Drawn, Engraved & Published, Sep. 1891, by F. P. Vadden, 115, Brewer

Street, Golden Square, London.

ARUNDO.

TRIANDRIA Digynia.

GENERIC CHARACTER.

Calyx two-valved. *Florets* crowded together, encompassed with wool.

SPECIES.

Arundo arenaria. Sea Reed-grass.

Lin. spec. 121. *fl. lapp. n.* 43. *Huds. angl.* 54. *With. arr.* 118. Figured in *Mor. hist. f.* 8. *t.* 4. *f.* 16. *row.* 3. *Ger. herb.* 38. 3. *emac.* 42. 3. *Park. theat.* 1198. 3.—*Florets*, *Scheuch. t.* 3. *f.* 8. A, B, C. *Monti* 92. Described by *Ray, hist.* 1259. *n.* 3. *With. & Krock. files. n.* 188.

SPECIFIC CHARACTER.

Calyxes one-flowered. *Leaves* rolled inwards, sharp-pointed and pungent.

DESCRIPTION.

ROOT perennial. Stalks a foot and half high, or more, with two or three joints. Leaves glaucous or bluish green, equalling or exceeding the stalks in length, at first flat, but by their dryness or that of the soil in which they grow, contracted on the sides and rolled up, so as to appear like rush

leaves. Spike roundish, four or five inches long, as thick as the little finger in the middle, but narrowing to each end.

OBSERVATIONS.

Native of the sandy coasts in Europe and America; flowering in June and July.

Linneus thinks it probable that this grass might originate from *Arundo epigeios* impregnated by the pollen of *Elymus arenarius*. Dr. Stokes is of opinion that it has a much nearer affinity in habit, as well as structure, to *Phalaris*, than to *Arundo*.

The sand gathers about this grass into hills or banks. The Dutch plant it on their sea banks with great success. And Mr. Woodward informs us that it is planted about Wells in Norfolk, to aid in repelling the sea. The country people know it by the name of Sea-Matweed, or Marram. They cut and bleach it for making mats; and where it is plentiful, houses are thatched with it*.

* Lin. lapp. With. Ray.



Described, engraved & published by J. G. Smith, No. 15, Brewer Street, Golden Square.

SPECIES.

Lolium temulentum. Annual Darnel-grass.

Lin. spec. 122. *Huds. angl.* 55. *With. arr.* 121. Figured by *Schreber*, t. 36. *Fl. dan.* t. 160. *Ger. herb.* 71. 1. *emac.* 78. 1. *Park. theat.* 1145. 1. *Mor. hist.* f. 8. t. 2. row. 2. (*Lolium verum*). *Mus. rust.* 6. t. 1. f. 1.—Spike, *Leers herb. born.* t. 12. f. 2. Spicule, *Scheuch.* t. 1. f. 7. E, F. *Monti* 18. Described by *Haller*, *helv. n.* 1420. *Pollich, pal. n.* 130. *Leers n.* 98. *Krock. files. n.* 190. *Raii hist.* 1262.

SPECIFIC CHARACTER.

Spike awned; spicules compressed, many flowered.

DESCRIPTION.

ROOT annual. Stalks two or three feet high, upright, round, especially near the spike, having 3, 4, or 5, joints. Leaves flat, pointed, from 9 inches to a foot or more in length, and 3 or 4 lines in breadth; the upper surface rough, the lower smooth. Sheaths striated, rough, crowned with a short blunt ligula, slightly notched at the edge. Spike from 5 or 6 inches to a foot in length. Spicules alternate, in a double row, pale green, half an inch long: the number of flowers in each varying from 5 to 9. The single valve of the calyx is the length of the spicule, and has not any awn; the terminating flower of each spicule, and fre-

quently the lower spicules, have two calycine valves. The outer valve of the corolla is only half the length of the calyx ; it is edged with white, and puts forth below the tip a straight awn, twice its own length. The seed is inclosed in the corolla, fastened to the inner valve, and does not quit it spontaneously.

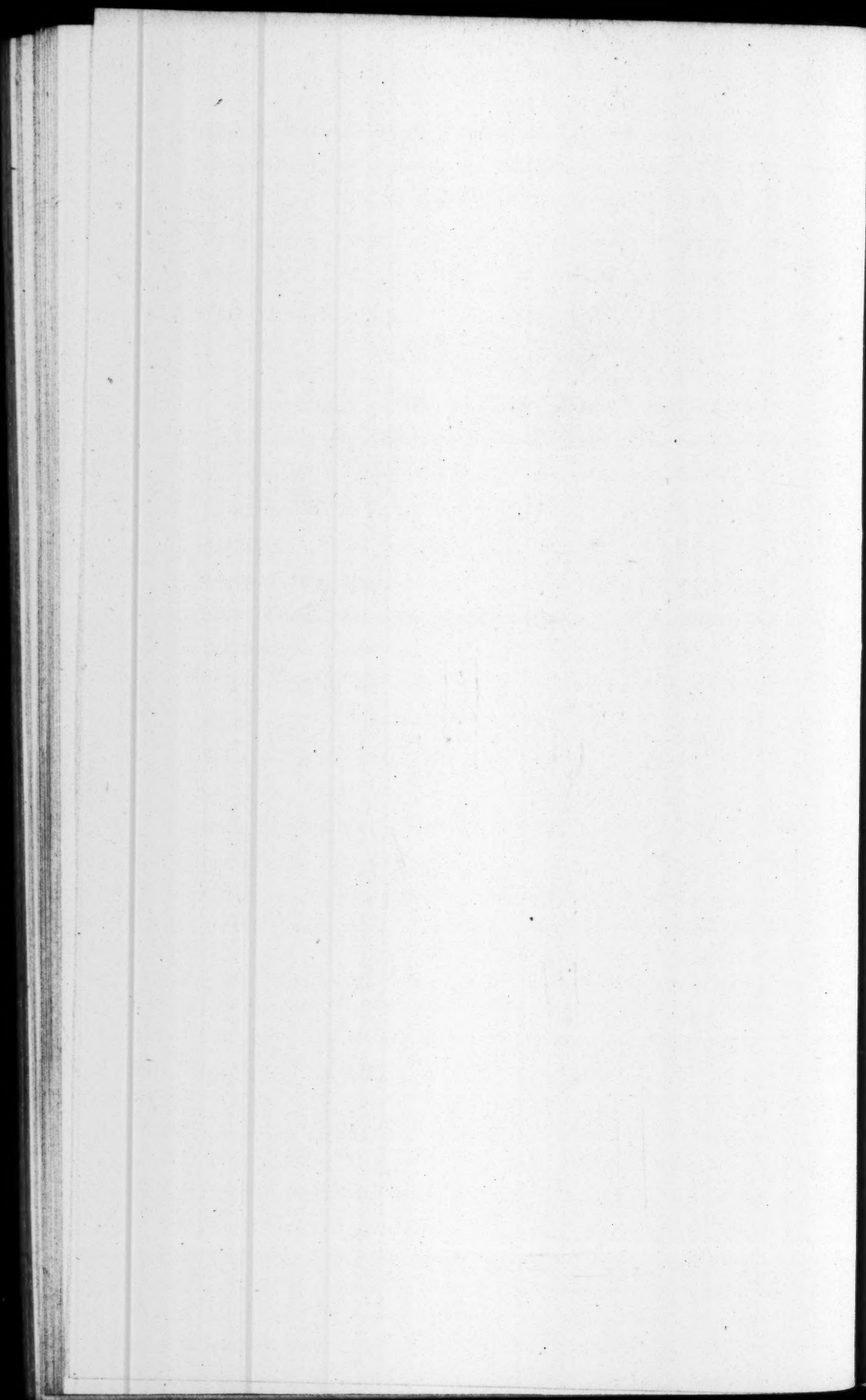
OBSERVATIONS.

Though there can be no doubt of this being a distinct species from *Perennial Darnel*, or *Ray-grass*, (see p. & t. 4.) yet we are at a loss for specific distinctions ; for that has sometimes awns to the flowers, and this, not unfrequently, has none. This, however, is annual, taller and larger in every respect, and of a paler hue. Its place of growth is also different ; for it is a weed among corn, especially wheat and barley.

The flour of the seeds, mixed with wheat flour, produces disorders in the human body ; but it has not a sensible effect, unless taken in considerable quantity ; or, according to Linneus, eaten hot. The seed, malted with barley, soon occasions drunkenness. Hence the French name, *Ivraie*, and our English *Ray-grass*.

It flowers in July and August, later than *Lolium perenne*.

In this enlightened age it is scarcely necessary to correct an old vulgar error, that wheat degenerates into this grass. The fact is, that in very wet seasons, and among very bad husbandmen, Darnel (infelix *Lolium*) has so far prevailed as to suffocate the wheat, and to take its place.





TRIFOLIUM.

DIADELPHIA *Decandria.*

Nat. order of *Leguminous* or *Papilionaceous* plants.

GENERIC CHARACTER.

Flowers collected into a head. *Legume* scarcely longer than the calyx, not opening but falling off.

SPECIES.

Trifolium repens. *Creeping White Trefoil, White Honeyfuckle, or Dutch Clover.*

Lin. spec. 1080. *Huds. angl.* 324. *With. arr.* 792. *Figured by Curtis, lond.* 3. 46. *Micheli gen.* t. 25. f. 3, 4. *Riv. tetr.* t. 17. f. 2. *Vaill. par.* t. 22. f. 1. *Ger. emac.* 1185. 1. *Park. theat.* 1110. f. 1. *Mor. hist.* f. 2. t. 12. f. 2.—Described in *Lin. suec.* n. 665. *Hall. helv.* n. 367. *Scop. carn.* n. 934. *Pollich, pal.* n. 699. *Krock. files.* n. 1201. *Lightf. scot.* 404. *Withering, Curtis, &c.*

SPECIFIC CHARACTER.

Heads of flowers like umbels; *legumes* with four seeds; *stalks* creeping.

ROOT perennial. *Stalks* numerous, spreading, round, unbranched, either green or purplish. *Leaflets* nearly sessile,

sharply ferrate, with a strong midrib, and numerous branching nerves, terminating in the ferratures, usually of an ovate shape, and blunt, but sometimes inversely heart-shaped and emarginate, or notched at the end; they are frequently of a purple colour, and most commonly have a white arch or crescent in the middle. Stipules lanceolate-ovate, in pairs, lengthened out into an awn, veined with purple. Petioles and peduncles very long, upright. Flowers (60) in a close head, very large in the cultivated plant, and of a round shape; each flower is on a short pedicel, and has a small awl-shaped bracte. The calyx is generally reddish; the teeth are nearly equal, only the two upper ones are rather longer than the others; and it is marked with ten streaks. Corolla white, or tinged with purple. The flowers stand upright till they are withering, and then they hang down. Legumes or pods oblong, round, jointed, terminating in a point, and containing from 2 to 4 seeds.

OBSERVATIONS.

White Clover is common in pastures throughout the greater part of Europe. It flowers from the end of May to September.

There are many varieties, depending on richness or poverty of soil, and other circumstances. Haller has noticed no less than eleven.

On all our good lands it seems to come spontaneously, and the growth of it is much encouraged by spreading of ashes. It does not come early, neither is it of a tall growth; but it forms an excellent bottom in pastures, and produces great abundance of succulent stalks and leaves, affording late feed in dry summers, when grasses are mostly burnt up. Mr. Curtis affirms that a single seedling, in his garden, covered more than a yard square of ground in one Summer.

We import the seed chiefly from Holland, whence it has obtained the name of *Dutch Clover*.

The leaves are a good rural hygrometer, being relaxed and flaccid in dry weather, but standing upright when it is moist.

We cannot ascertain when this White Clover came first into cultivation here, but it seems to be of very late date: for it is not mentioned by Gerard, Parkinson, or Ray, as an agricultural plant in this country, nor by any of the writers on husbandry of the last century, as far as we have been able to discover.

Gerard, however, says, that there is a Trefoil of this kind, which is sown in fields of the Low Countries, in Italy, &c., that cometh up ranker and higher than that which groweth in meadows, and is an excellent food for cattle, both to fatten them, and cause them to give great store of milk. *Herball*, p. 1018. *edit.* 1597.





SPECIES.

Trifolium ochroleucum. *Pallid Trefoil.*

Lin. syst. 689. *Huds. angl.* 325. *With. arr.* 797. *Relb. cant. n.* 540. *Raii hist.* 943. 8. & *syn.* 328. 3.—
Figured by *Jacquin austr.* 1. t. 40. *Mor. hist. f.* 2. t. 12. f. 12?—Described by *Haller, helv. n.* 378. *Krock. files. n.* 1208. *Gouan. illustr.* 51. *Jacqu. Ray, &c.*

SPECIFIC CHARACTER.

Spikes villous; *stalk* upright, pubescent, the lowest leaflets inversely heart-shaped.

DESCRIPTION.

ROOT biennial. Stalks villous, stiff, about a foot in height. Stipules in pairs, lanceolate, terminated by a long awn, striated, fringed with hairs. Leaves alternate, villous; leaflets sessile, the lower ones cordate and ovate in the same plant. Flowering heads rather of an ovate form. Calyx short, striated, fringed with hairs; the lower tooth very long, spreading, green; the other four equally short, tipped with purple, and sometimes wholly of that colour. Corolla of a pale brimstone colour; the standard very long, lanceolate, somewhat keeled; wings and keel equal*.

* Woodward, M. S.

OBSERVATIONS.

Native of dry pastures, thickets, and bushy places, in a calcareous soil in France, Switzerland, Austria, Silesia, and England. It is common near Cambridge; in Essex, Hertfordshire, Bedfordshire; near Stamford; about Bungay in Suffolk; Dupper's Hill, near Croydon, &c. Flowering in June and July.

This Trefoil is harsh, stiff, and hairy; and not abounding either in stalks or leaves, can never be sought for cultivation, where there are so many species superior to it.



COW-GRASS.

IN the fifth number of this work we promised to give our readers a figure of the Cow-grafs, which we are now enabled to do, from plants growing in Mr. Curtis's garden at Brompton. They were sent him out of Hampshire. On comparing them with other plants of the wild broad Clover, which he had collected from different parts of Battersea field, we do not discover any differences, except that in the latter the heads of flowers are smaller, the stalks green, and without hairs, till they approach the flowers, which appear earlier than those of the Cow-grafs.

It is evident that this is very different both from the true broad Clover, given in plate 3, and from that which we suppose to be the *Trifolium flexuosum* of Jacquin, engraved in plate 13. Nor does it at all resemble the wild perennial Clover of plate 2. But on examination, we find such a variety in the broad purple Clovers, in their wild state, that we are at a loss to determine any thing at present concerning them. Those who cultivate the Cow-grafs will judge from their figure, which is very exact, whether theirs is the same plant; and also whether different sorts or varieties are not cultivated under the same name.

Mr. Lisle, in his observations on husbandry, (p. 250) says,
 “ The broad-clover grafs, which of late years (anno 1707)
 “ had obtained some credit as a longer-living grafs than the
 “ common broad-clover, and is sown under the name of
 “ cow-grafs, I find to be the common purple trefoil, or

“ honey-suckle trefoil, as described by Mr. Ray, (hist. 944.)
“ distinguished from the great purple meadow-trefoil, which
“ has always hitherto been sowed by the country farmers,
“ and I doubt not but always will ; for by experience I find
“ the other not to yield half the burden, nor indeed in poor
“ ground to be a longer liver than the common fort.”

We apprehend, indeed, that the true broad Clover is perennial ; it will certainly continue several years in a garden, where it is kept clean from weeds ; and it wears out sooner in cultivation, because it does not run at the root, and is overborne by natural grasses and other plants, which do,

